



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX

75 Hawthorne Street  
San Francisco, CA 94105

Via U.S. Postal Service and Email

DEC 15 2015

Mr. Warren Switzer  
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Mrs. Debbie Olson, Executive Director  
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**Subject: Riverbank Army Ammunition Plant - Toxic Substances Control Act Cleanup of Polychlorinated Biphenyls (PCBs), Final Amendment 1 to EPA's July 2015 Approval**

Dear Mr. Switzer and Mrs. Olson:

Thank you for proposing modifications to several conditions in the U.S. Environmental Protection Agency Region 9's (EPA's) risk-based PCB cleanup approval (Approval) for the Riverbank Army Ammunition Plant dated July 22, 2015. Enclosed is the table ("Riverbank Army Ammunition Plant - EPA Region 9 Final Amendment 1 to July 22, 2015 Conditional Approval for Phase 2 PCB Cleanup Work, November 30, 2015") containing the final modified conditions of approval (modified conditions).

The original conditions were amended based on your comments, discussions with you, and further deliberation by EPA. Also, our November 19, 2015 email<sup>1</sup> stated that EPA would issue final revised conditions of approval after the Thanksgiving Holiday.

This letter also amends certain sections of the July 22, 2015 Approval (enclosed) for consistency with the modified conditions. Accordingly, this letter together with the enclosed modified conditions constitutes the final Amendment 1 to the Approval.

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<sup>1</sup> The November 19, 2015 email from Carmen Santos to Warren Switzer (U.S. Army) and Debbie Olson (City of Riverbank Local Redevelopment Authority) provided final revisions to the definitions of "Building" and "building structures" included in the final modified conditions of approval.

Final Amendment 1 to July 22, 2015 EPA Approval

1. *The term "building."* This term is used in certain sections of the Approval. The enclosed final modified conditions of approval define the term "Building or Buildings." Consistent with that definition, anywhere in Sections I through IV where the terms "building" or "buildings" are used, those terms are replaced by "Building or Buildings."

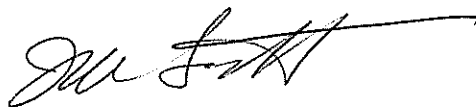
2. *Section IV.F.2, Application, Section 5.0, Air Monitoring and Decontamination Standards.* EPA is revising the sentence: "Air monitoring outside building perimeter is not covered by this Approval except when upwind and downwind air sampling is necessary when conducting air sampling inside the buildings" by deleting the phrase "except when upwind and downwind air sampling is necessary when conducting air sampling inside the buildings." As further revised, the sentence now reads: "Air monitoring outside the perimeter of buildings is not covered by this Approval."

3. *Section V, Conditions of Approval and Section I, Introduction.* EPA modified and consolidated in the enclosed table the conditions of approval contained in Table 1 (General Conditions of Approval) and Table 2 (Specific Conditions of Approval) of the Approval. Tables 1 and 2 are superseded and replaced by the enclosed table containing the final modified conditions of approval. Therefore, this letter also revises the text in Sections I (Introduction) and Section V (Conditions of Approval) of the Approval by replacing references to Tables 1 and 2 with references to the enclosed table.

The July 22, 2015 Approval is in effect and must be implemented as modified by this final Amendment 1. This Amendment is effective immediately.

We look forward to the Parties implementing the Approval as modified by Amendment 1. If you have questions concerning Amendment 1, please call Carmen D. Santos, Region 9 PCB Coordinator, at 415.972.3360.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Scott", with a long horizontal flourish extending to the right.

Jeff Scott, Director  
Land Division

Enclosures

Cc: John Woodyard, Weston Solutions, Inc.

## Riverbank Army Ammunition Plant – EPA Region 9 Final Amendment 1 to July 22, 2015 Conditional Approval for Phase 2 PCB Cleanup Work

Elements of Approval	Amended Conditions of Approval <sup>2</sup> Implementation by the Parties: U.S. Army (Army) and Riverbank Local Redevelopment Authority (RLRA)
Definitions	<p><b>1. RAAP.</b> Consistent with EPA's September 4, 2012 Phase 1 conditional Approval and subsequent amendments to that Approval, the term RAAP in the Phase 2 Approval refers to the Riverbank Army Ammunition Plant.</p> <p><b>2. Building or Buildings.</b> In this Approval, the terms "Building" or "Buildings" refer to the buildings the Parties have identified at the RAAP as containing Galbestos, PCB paint, remaining equipment (fixed and not fixed), other potential sources of PCBs, and/or PCB contamination. These terms include two subsets of Buildings: (1) Galbestos Buildings and (2) Non-Galbestos PCB-Containing Buildings.</p> <p>In addition, as established in the definition of "building structures," the term "Building" covers any "building structure" where PCB sources have been found and/or PCB impacts from those sources have been verified inside those structures. Accordingly, these terms will also refer to other Buildings the Parties may identify in Condition B.2 as "building structures" containing PCBs.</p> <p>The Galbestos Buildings subset specifically refers to Buildings 1 through 8, 11, 12, 15, 43, 33 through 39, 45 through 50, 60, 80 through 83, 107, 133, and 160, collectively, and identified as "Galbestos buildings" in Figure 3 (RBAAP Phase 2 Preliminary Schedule) and related tables in the Sequence Document the Parties included as part of the Application.</p> <p>The Non-Galbestos PCB-Containing Buildings subset refers to Buildings 9, 13, 14, 120, 156, 171, and 181 identified in the above referenced Figure 3 and related tables as "non-Galbestos buildings" where cleanup of concrete will be conducted.<sup>3</sup> This Building subset also covers the "building structures" discussed above, in the first paragraph of the "Building or Buildings" definition.</p> <p><b>3. building structures.</b> In this Approval, the term "building structures" refers to those buildings at the RAAP for which the Parties have provided no information verifying the presence or absence of PCBs inside</p>

<sup>2</sup> The conditions of approval only cover PCB remediation wastes in the interior of Buildings (as defined in the "Definition" section of the conditions of approval).

<sup>3</sup> Cleanup of Non-Galbestos PCB-Containing Buildings is to be addressed in the PCB cleanup plan required in Condition E. In addition to concrete, non-porous surfaces may need to be cleaned up. Cleanup methods and details are not part of any definition included under the "Definitions" section of the conditions of approval.

such buildings. PCBs may be present in the building structures based on age of construction, potential PCB sources (e.g., paint) in the buildings, and potential uses of PCBs (e.g., equipment that contains PCBs such as compressors, pumps, hydraulic equipment). This Approval does not cover any of such “building structures” or building structures identified by the Parties as not containing PCBs in the list required in Condition B.2. However, in the event that regulated sources of PCBs are found and/or PCB impacts from those sources are verified inside those building structures while this Approval is in effect, the building structures will meet the definition of Building and will be subject to this Approval.

If PCBs are found in the interior of the building structures in the future (after this Approval is no longer in effect) due to the presence of non-liquid PCBs (e.g., PCB-containing paint) and/or impacts from liquid and non-liquid PCB sources (e.g., concrete contaminated with PCBs), the Parties are responsible for complying with all TSCA PCB requirements in the use authorization established in 40 CFR 761.30(u) for continued use of those building structures. The Parties may need to submit a cleanup plan under 40 CFR 761.61(c) to address PCB contamination inside such building structures.

**4. *Occupants.*** In this Approval, the term “occupants” refers to tenants and other people that occupy the Buildings. Tenant employees and Army staff are occupants.

**5. *Public access areas.*** In this Approval, “public access areas” are defined as those locations inside the Buildings into where the public may enter. If any Building has these areas, those areas are subject to the sampling and cleanup requirements in this Approval. Public access areas outside the Buildings and building structures are not covered by this Approval; and are part of the PCB Cleanup Site as defined below. Public access areas outside the Buildings and building structures, if any, may be covered in the overall Superfund cleanup to be conducted at the RAAP.

**6. *Occupant access areas.*** In this Approval, the term “occupant access areas” is used interchangeably with “tenant access areas.” These access areas are defined as those Buildings or areas within Buildings leased by tenants and occupied by tenants and/or their employees. These access areas are where tenants and/or their employees work and/or have access to enter. These areas also include any Army-staff-occupied area within the Buildings.

**7. *Fixed equipment.*** In this Approval, fixed equipment refers to equipment that is part of the real property whether it is currently owned or previously owned by the Army and/or in use by occupants. Fixed equipment does not cover any non-fixed equipment within the Buildings. Non-fixed equipment is subject to EPA’s Phase 1 Approval dated September 4, 2012, as amended.

	<p><b>8. Air samples.</b> Unless otherwise specified in the Approval, air samples for PCB analysis are those described in Condition B.8 of this Approval.</p> <p><b>9. PCB Cleanup Site (PCS).</b> In this Approval, the interior of each Building (as defined above) and each building structure (as defined above), whether that interior is subdivided or not into different sub-buildings or rooms, represent individual PCB cleanup sites. Each individual PCS also encompasses all areas outside of and beyond the physical footprint of each Building and building structure to where PCBs may have migrated via storm water runoff, wind dispersion, or other mechanisms. The overall facility cleanup under the Superfund Program will address PCBs in areas beyond the physical footprint of each Building and building structure. In this Approval, the TSCA PCB Cleanup Program is only addressing cleanup of PCBs inside the Buildings.</p>
<b>A. Required Additional Information</b>	<p><b>1. Certification Required in 40 CFR 761.61(c)(1)</b></p> <p>a. In accordance with 40 CFR 761.61(c)(1), the Parties must submit the written Certification consistent with 40 CFR 761.61(a)(3). The Certification must be signed by both the owner of the property (U.S. Army) and the cleanup party (RLRA).</p> <p><b>2. Notification of PCB Activity</b></p> <p>a. Consistent with 40 CFR 761, the Parties must submit to EPA HQs the Notification of PCB Activity Form in 40 CFR 761.205 before beginning the removal of any PCBs from the Buildings.</p>
<b>B. Revised Sampling and Analysis Plan</b>	<p>1. Within 60 days after the date of this Amendment submit a revised sampling and analysis plan (Revised SAP) consistent with the conditions in this Amendment and that contains data quality objectives for the sampling activities required in this Approval.</p> <p>2. The Revised SAP must include a list of all the Buildings and building structures at the RAAP. The list must verify the Buildings the Parties will sample and/or clean up consistent with this Approval. The list must note which building structures the Parties believe should not be subject to this Approval and provide an explanation of why they should not be characterized and/or cleaned up for PCBs consistent with this Approval. Also refer to the definitions of "Building" and "building structure."</p> <p>3. The Revised SAP must include a summary of the PCB cleanup levels or goals established in Condition C.</p> <p>4. The Revised SAP must include all the procedures that will be used for collection of air samples; and bulk dust, porous surfaces bulk samples, and wipe samples from non-porous surfaces to complete</p>

characterization of PCBs inside the Buildings. Also refer to the definition of Building. The characterization data must be used by the Parties to prepare the PCB Cleanup Plan required in Condition E of this Approval.

5. All non-liquid samples, such as concrete, paint, and wipe samples must be extracted via EPA Method 3540C (Soxhlet); and extraction followed by analysis via EPA Method 8082A. The results for all non-liquid samples (e.g., paint, concrete) must be reported as dry weight and percent moisture reported by the laboratory for all those samples.

6. Discrete dried paint samples must be collected from fixed equipment and other surfaces inside the Buildings to make reuse and disposal determinations. At a minimum, each dried paint sample should consist of 30 to 50 grams. The paint samples must not be composited. The analytical laboratory must be instructed to properly pulverize and thoroughly homogenize each paint sample before Soxhlet extraction for analysis via EPA Method 8082A. In addition, refer to Condition B.5.

7. Concrete samples must be collected by an applicable method in the EPA Region 1 Standard Operating Procedures for porous surfaces, May 5, 2011, or latest version. In reference to concrete, if concrete chip samples are collected, the analytical laboratory must be instructed to properly pulverize and thoroughly homogenize each bulk chip sample before Soxhlet extraction for analysis via EPA Method 8082A.

8. Unless otherwise specified elsewhere in the Conditions of Approval, air samples for vapor and particulates must be collected inside the Buildings (i.e., indoor air samples) during the 8-hour working period via Method TO-4A. A quartz filter must be attached to the TO-4A sampling train (PUF) to collect particulates in air. The combined sampling train facilitates collection of air vapor and particulates. The PUF and quartz filter must be individually extracted via EPA Method 3540C (Soxhlet); and the PUF and quartz filter extracts individually analyzed via EPA method 8082A. The analytical results for vapor and particulates must be reported separately by the analytical laboratory. The analytical results for all the Aroclors including Aroclor 1268 must be reported for each sample. Chain of custody forms must include the sampling time period and air volume for each sample and formula used to calculate the air volume.

9. The air sampling section of the Revised SAP must include information such as and not limited to:

- data quality objectives specific to air sampling,
- number of air samples for each sampling phase (e.g., before removal of Galbestos) described in Condition B.10 and presented in tables for each individual Building,
- figures depicting sampling locations inside the Buildings and tenant operational areas,
- list of all Buildings where air sampling will be conducted,
- risk-based air levels to be achieved and specified in Condition C,

- measures to prevent potential breakthrough of the PUF sampler and quartz filter,
- extraction and analytical methods,
- real-time air sampling methods for dust in air,
- submission of real-time air sampling data when maximum air dust measurements are exceeded together with description of immediate actions that will be taken to lower dust levels, and
- schedules addressing submission of (1) preliminary laboratory data to EPA on CDROM and hard copy immediately after received by the Parties and (2) laboratory validated (Level 3) air data on CD-ROM within 30 days after validated by a third party.

10. The Revised SAP must include the following sampling phases:

**a. Baseline Sampling Before Removal of Galbestos, Paint, and Remaining Equipment**

1. All tenant occupied Buildings and public access areas must be sampled. Air samples, surface wipes, and bulk dust samples must be collected within all tenant operational areas. The Parties must provide justification for the number of each type of sample that will be collected during baseline sampling. EPA will use the baseline analytical results and sampling data (e.g., location of samples) to (1) evaluate current conditions within tenant occupied areas, (2) determine if any immediate actions other than the interim actions required in this Approval are necessary, and (3) compare the baseline and cleanup verification data to assess the efficacy of the PCB cleanup inside the Buildings. Immediate actions may include relocating the tenants to areas not impacted by PCBs; or immediately cleaning accessible surfaces in the occupied Buildings and/or areas during the duration of removal and remediation activities to maintain a safe work environment.
2. The justification for the number of air samples to be collected from occupied Buildings must include a full description of each Building layout and size of the Building and tenant leased area with figures to scale. In addition, the justification must explain (1) if the Building space is totally open and whether it is subdivided by walls that extend to and touch the ceiling and (2) what volume of air within one Building will be represented by the air samples that will be collected inside each Building given that tenant leased spaces range from 400 to 73,000 square feet.
3. The analytical results and sampling data, identified as preliminary data, must be provided to EPA immediately after received by the Parties. Level 3 validated data must be submitted to EPA within 30 days after the Parties' submission to EPA of preliminary analytical results for air samples, and surface wipe and bulk dust samples.

**b. Sampling During Galbestos and Paint Removal, Equipment Cleanup, and PCB Cleanup Activities**

	<ol style="list-style-type: none"> <li>1. Real-time monitoring for dust in air must be conducted in all occupied Buildings (including tenant operational and access areas) and public access areas on a daily basis during removal of Galbestos, paint, equipment cleaning and removal, and during PCB cleanup activities. This data must be submitted and summarized in the final cleanup completion report to EPA.</li> <li>2. The Parties must compare the dust values in Condition B.10.b.2.a. through B.10.b.2.d. and use the most stringent as the target dust concentration for real time dust monitoring: <ol style="list-style-type: none"> <li>a. California PM10 air standard of 50 ug/m<sup>3</sup> (or 0.050 mg/m<sup>3</sup>).</li> <li>b. Federal PM2.5 standard of 35 ug/m<sup>3</sup> (or 0.035 mg/m<sup>3</sup>).</li> <li>c. Fugitive dust standards applicable to construction projects in San Joaquin Valley Unified Air Pollution Control District rules.</li> <li>d. A site specific risk-based dust concentration in air calculated using up-to-date, technically defensible, and acceptable risk assessment techniques.</li> </ol> </li> <li>3. Visible fugitive dust must not be observed outside of the work area during removal of materials that contain PCBs (e.g., Galbestos) and performance of PCB cleanup activities that may generate dust such as scarification of concrete floors. EPA recommends the Parties consult on this matter with the San Joaquin Valley Unified Air Pollution Control District. The District has rules applicable to fugitive dust. This Approval requires the Parties to comply with all applicable requirements from state and local regulatory agencies.</li> <li>5. If the target dust concentration in air is exceeded at any time, the Parties must implement actions protective of occupants and their work spaces to reduce dust to below the target air dust level consistent with Condition D and D.6.</li> <li>6. The Parties must collect monthly surface wipe samples in all areas occupied by tenants or other occupants, and/or accessed by tenants or the public until all the Galbestos panels are removed and replaced by panels not containing PCBs. These samples must be collected to verify the efficacy of the interim PCB best management practices (BMPs) the Parties must implement concurrent with any PCB activity that generates dust consistent with Conditions D and D.5 of this Approval. The EPA Project Manager (Carmen Santos) may reconsider the frequency of surface wipe sampling if</li> </ol>
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previous wipe sampling data collected consistent with this Condition show no dust above the cleanup goal of 5 ug total PCBs/100 cm sq.

7. The Parties must use real dust monitoring equipment that uses light scattering technology to measure dust in air, measures relative air humidity, and automatically corrects the dust measurements for humidity.

a. The monitor is capable of measuring dust concentrations below the target air dust concentration; and it is capable of integrating real time measurements every five minutes. The Parties must use a maximum of 5-minute integration.

b. The Parties must use wind roses to establish background for all the Buildings.

c. The Parties must report the real time dust monitoring data to EPA without making any corrections to the data based on upwind or downwind conditions.

d. The Parties may consider the Thermo 1500, TSI-Dust Track, or a wired or wireless Beta Attenuation Monitor. EPA's Office of Research and Development has recommended the Thermo 1500. This monitor is easy to use and reliable. The monitors to be chosen and used by the Parties must be properly calibrated and have a calibration certificate available indicating the date when the instrument was calibrated. Manufacturers require dust monitors be calibrated on a yearly basis. The monitors mentioned here are available via companies that rent this type of equipment.

e. The Parties must provide figures to scale of each Building proposing the number of monitors that will be used per Building and the location of the monitors inside the Buildings. Tenant occupied and access areas area a priority for real-time dust monitoring.

**c. Sampling After Removal of Galbestos and Paint**

1. Surface wipe samples must be collected within all areas of occupied Buildings where PCB remediation waste has been verified and PCBs in those samples should be at or below the surface cleanup goal of 5 ug total PCBs/100 cm sq.

2. If analytical results for the collected surface wipes show that dust contains PCBs above the surface cleanup goal, the Parties must clean all accessible surfaces to protect tenants or other occupants where they conduct their operations inside the Building. Resampling of the surfaces

using wipes must be conducted to assure PCBs are below the surface cleanup goal. If required by EPA, the Parties may also need to conduct air sampling via method TO-4A inside the Buildings.

**d. Sampling to Characterize PCBs In Concrete Inside Buildings**

1. The Revised SAP must include figures depicting the sampling grids for each Building and tables summarizing the number of concrete samples that will be collected from concrete floors, walls, columns, trenches, and pits from the interior of each Building. The sampling grids must clearly show they exclusively cover the interior of the Buildings and exclude all areas immediately adjacent and outside the Buildings. Concrete floors must be sampled following a grid(s) that will yield a sample density representative of each area to be sampled.

The Parties must propose Building-specific sampling grids for characterization that are representative of the physical lay out (e.g., rooms or building inside the Building) and size of each Building. The size of the spaces currently occupied by tenants or others within those Buildings, which range from 400 to 73,000 square feet, also need to be considered. Characterization of PCBs inside the occupied spaces need a sampling grid size that is applicable and representative of the spaces the tenants or others occupy. In that sense, the 30 feet x 30 feet grid (900 square feet grid) proposed in Weston's June 26, 2015 email may not be appropriate as EPA will be assessing the protectiveness of the PCB cleanup within those specific tenant spaces and the remaining of the Building interior.

The Parties must propose building-specific sampling grids and the figures depicting such grids must clearly show they exclusively cover the interior of the Buildings and exclude any areas outside the Buildings.

Biased sampling must also be conducted on concrete surfaces (e.g., floors, trenches, pits) in areas with stains and cracks. Depending on the results of biased concrete sampling, EPA may require additional concrete samples.

2. Characterization grids smaller than 900 square feet ( 30 feet x 30 feet grid) must be proposed by the Parties to justify the number of concrete samples to be collected from walls and columns. The size of such grids must yield a number of samples representative of the areas to be sampled. The characterization sampling grid must also be applied to each side of each concrete column. In addition, where characterization results are above the cleanup goals for concrete, step out

	<p>concrete samples must be collected and analyzed to adequately determine the extent of PCB contamination in those surfaces being characterized.</p> <p>3. The characterization analytical results to be evaluated consistent with this Condition must be of a quality and accuracy acceptable to EPA. The analytical results of concrete samples (grid and biased samples) must be input into the Pro-UCL statistical program to calculate the 95% upper confidence limit of the mean (95% UCL) of those results as described below. ProUCL calculations and spatial distribution evaluations must be made separately for grid and biased samples.</p> <p>ProUCL calculations must be made separately for the floor in each Building and individually for each wall and column within each Building. The individually calculated 95% UCLs (exposure point concentrations) must be compared to the concrete cleanup goal to determine if the 95% UCL is equal to or below that goal. The spatial distribution of the individual sets (e.g., floor, each wall) of concrete analytical results must be evaluated to determine the potential for hot spots. Based on the 95% UCL and spatial distribution of the characterization samples EPA will determine (1) if additional characterization samples are necessary and (2) the extent to which porous surfaces need to be cleaned up so the cleanup goal can be met.</p> <p>Concrete analytical results for each tenant occupied space must be separately evaluated consistent with this Condition.</p> <p>4. If EPA agrees the ProUCL statistical analysis together with the spatial distribution of the characterization data demonstrates that cleanup goals are already met in all surfaces characterized for PCBs inside a Building, then cleanup and cleanup verification sampling may not be necessary inside the Building.</p> <p>5. If EPA agrees the ProUCL statistical analysis together with the spatial distribution of the characterization data demonstrates that cleanup goals are not met in any surface or portions of any surface characterized for PCBs inside a Building, then cleanup and cleanup verification sampling of those surfaces or portions thereof must be conducted consistent with this Approval.</p> <p>6. As an alternative to conducting additional concrete characterization as a first step before cleanup, the Parties may perform wall-to-wall cleaning in any Building to remove surficial dust, oil, or grime to facilitate collection of concrete characterization samples that are representative of PCB concentrations in the concrete. Such cleaning methods include the use of HEPA-equipped vacuums, pressure washing, and surfactant cleaning or a combination of these methods. The</p>
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Parties may also clean up the concrete using decontamination methods in 40 CFR 761.79(b) applicable to this porous surface before collection of characterization samples. Stains and cracks on concrete floors and in concrete floors and walls inside trenches and pits below the floor surface must be identified and marked before any pre-characterization cleaning (e.g., pressure washing, surfactants) and/or cleanup (40 CFR 761.79(b) methods) procedures are used to assure that characterization samples are collected in those areas.

Conditions B.10.d.1 through B.10.d.6. apply to concrete floors, columns, walls, and pits (at floor surface level); and to floors and walls of concrete pits and trenches below the concrete floor surface. The vertical concrete surfaces addressed in Condition b.10.d (inclusive of Condition B.10.d.6) are those verified by the Parties to be PCB remediation wastes. For concrete floors, characterization and cleanup verification sampling must be conducted wall-to-wall. The additional characterization must be conducted consistent with Condition B.10.d.1. through B.10.d.5. Also, consistent with these conditions and Condition B.10.e., EPA will determine if further characterization and/or cleanup is necessary. If EPA determines that no further characterization is necessary and the cleanup levels have been met in concrete surfaces, the characterization samples will also be considered to meet the purpose of cleanup verification samples. If EPA determines the cleanup levels have not been met, additional cleanup and cleanup verification sampling will be required.

**e. Sampling for PCB Cleanup Verification**

1. After implementation of PCB cleanup methods, the Parties must collect cleanup verification samples inside each Building. For this purpose, air samples; and non-porous surface wipes, bulk dust (if available), and bulk porous surface samples must be collected inside Buildings including tenant-occupied, tenant access areas, and public access areas.
2. The Revised SAP must include the methods for collection and analysis of discrete samples that will be used to verify efficacy of the PCB cleanup inside the Buildings. The PCB Cleanup Plan required in Condition E of this Approval must include the details of PCB cleanup verification sampling.
3. The Parties must evaluate the analytical results for PCB cleanup verification samples following the process in Condition B.10.d.
4. The air and surfaces in all spaces inside the Buildings that are currently not occupied or accessible to tenants-and/or the public must be tested during PCB cleanup verification sampling

	<p>activities. This testing is to be done at that time if any of those spaces are planned to be occupied before EPA determines the PCB cleanup inside the Buildings is complete. If any un-occupied spaces inside the Buildings are planned for occupancy after EPA determines the PCB cleanup is complete, testing must be conducted consistent with Condition F.4.</p> <p><b>f. <u>Sampling After PCB Cleanup Verification – Post PCB Cleanup and Long-Term Activities</u></b></p> <ol style="list-style-type: none"> <li>1. The Revised SAP must defer post cleanup verification sampling inside the Buildings to the PCB post cleanup sampling plans required in Conditions F and G. Refer to those conditions for details.</li> <li>2. Clarification. Implementation of the Revised SAP by the Parties will end after (1) cleanup verification sampling has been completed, (2) EPA determines that recleaning in any area inside the Buildings is not necessary, and (3) EPA determines the cleanup is complete based on its review of the PCB cleanup verification data for quality, accuracy, and completeness and consistent with the process in Condition B.10.d. The cleanup verification data includes air samples, and surface wipes from non-porous surfaces that were decontaminated, bulk dust (if any present), and bulk concrete samples collected after full implementation of physical PCB cleanup methods (or cleaning methods if the data demonstrate they achieved the cleanup levels for concrete).</li> </ol>
<p><b>C. Risk-Based Cleanup Levels or Goals</b></p>	<p><b>1. Revised SAP Required in Condition B and PCB Cleanup Plan Required in Condition E.</b> The SAP and the PCB Cleanup Plan must include the PCB risk-based cleanup levels or goals established below to assure that laboratory analytical method detection limits yield accurate PCB analytical results that can be compared to the cleanup levels or goals.</p> <p><b>2. Risk-Based PCB Cleanup Levels (or Goals).</b> The Parties must achieve the cleanup levels (or goals) that follow. In the event that a cleanup level or goal is not being achieved despite good effort by the Parties, the Parties will discuss this matter with EPA to agree to a mutually acceptable solution. If necessary, EPA may amend this Approval to include conditions for implementation of such solution(s).</p> <p><b>a. Porous Surfaces, concrete.</b></p> <ol style="list-style-type: none"> <li>1. The Parties must achieve a cleanup goal of 5 milligram/kilogram (ppm) total PCBs. This cleanup level applies to all concrete surfaces verified to be a PCB remediation waste inside the Buildings. Analysis results for bulk concrete samples from individual surfaces (e.g., floors separate from one wall) must be used to calculate the individual 95% upper confidence limits (95% UCLs) of the mean of the data. In context to cleanup verification data, the 95% UCL will be compared to the concrete cleanup level. If the 95% UCL is equal to or below the cleanup level and the spatial distribution of</li> </ol>

the results do not suggest the need for recleaning any specific location(s) within the sampled surface area, additional cleanup will not be required. Also refer to Condition B.10.d.

**b. Non-Porous Surfaces**

1. Fixed Equipment. The cleanup goal is 5 micrograms total PCBs/100 centimeter square (5 ug total PCBs/100 cm sq.). Each sample will be compared to the cleanup goal of 5 ug /100 cm sq.

2. Remaining Equipment that is not Fixed Equipment. The Parties must address this equipment consistent with EPA's September 4, 2012 conditional Approval (as subsequently amended by EPA) of the Parties' Phase 1 PCB Cleanup Work. EPA's Approval for the Phase 2 PCB Cleanup Work does not cover that remaining equipment.

3. Steel Structure Members. The cleanup goal is 5 ug total PCBs/100 cm sq. total PCBs and applies to non-porous surfaces (e.g., steel) that have been decontaminated. The 95% UCL of the mean of discrete surface wipe sample results will be calculated using ProUCL and the 95% UCL compared to 5 ug total PCBs/100 cm. sq. In context to cleanup verification, if the 95% UCL is equal to or below the cleanup goal and the spatial distribution of the data does not suggest the need for recleaning any location(s) within the sampled surface area, additional cleanup will not be required.

**c. Indoor Air Before and During Galbestos and Paint Removal and Equipment Cleaning**

1. The air inside the Buildings must meet the risk-based level of 0.21 ug total PCBs/cubic meter of air (0.21 ug total PCBs/m<sup>3</sup>), which is EPA's risk-based Regional Screening Level for air based on an industrial exposure scenario.

**d. Indoor Air Dust - Real Time Monitoring During Any Activity that Generates Dust**

1. Real-time monitoring for dust in air must not exceed, the lowest value for dust in air among those listed in Condition B.10.b.2. Real-time monitoring must be conducted inside the Buildings including occupied areas such as tenant operational areas, tenant access areas, and public access areas. In areas that are not occupied, indoor air dust sampling may not be necessary.

**e. Indoor Air Cleanup Verification Sampling**

1. The air within the Buildings must meet the 0.21 ug total PCBs/m<sup>3</sup> for industrial / commercial use. If future use of the Buildings is expanded to include office spaces, EPA may require the air RSL for unrestricted use of 0.0049 ug total PCBs/m<sup>3</sup> be applied to the air in those spaces.

<p><b>D. Work Sequence and Interim Best Management Practices Plan (Interim BMP Plan)</b></p>	<ol style="list-style-type: none"> <li>1. Within 60 days after the date of this Approval, the Parties must submit the stand alone Work Sequence and Interim Best Management Practices Plan (Interim BMP Plan) for EPA review and approval. The Interim BMP Plan is not a PCB sampling plan or a PCB cleanup plan.</li>   <li>2. The Interim BMP Plan must describe the sequential order in which the following activities will be conducted at each Building. The sequence described in the application is not consistent with the sequence the Parties discussed with EPA during the June 2015 conference calls. <ul style="list-style-type: none"> <li>• Implementation of baseline PCB sampling (Condition B.10.a),</li> <li>• Notification in writing by the Parties to Building occupants that describes the PCB activities to be conducted inside the Buildings (e.g., removal of Galbestos panels and paint that contain PCBs, PCB cleanup work), provides information on the risk of exposure to PCBs during those activities, and describes the measures to be taken to prevent those exposures,</li> <li>• Removal of Galbestos and other PCB bulk products in tandem with interim BMPs and real-time air monitoring for dust at each Building,</li> <li>• Replacement of Galbestos panels with panels that do not contain any levels of PCBs at each Building,</li> <li>• Sampling of fixed and non-fixed equipment inside the Buildings,</li> <li>• Cleanup and /or removal of remaining equipment inside the Buildings in tandem with interim BMPs,</li> <li>• Characterization of PCBs inside the Buildings,</li> <li>• Cleanup of PCBs inside the Buildings in tandem with interim BMPs,</li> <li>• Storage of PCB waste for transportation to offsite disposal,</li> <li>• Transportation of PCB waste and disposal at offsite disposal facility, and</li> <li>• PCB cleanup work addressing PCB remediation wastes inside the Buildings.</li> </ul> </li>   <li>3. The Interim BMP Plan must describe in detail the procedures the Parties will implement to completely isolate Building occupants and their operational areas during removal of Galbestos panels and paint, clean up and removal of equipment, and clean up of PCB remediation wastes inside the Buildings.</li>   <li>4. If Building occupants and their operational areas cannot be physically isolated in a protective manner, the Parties should remove the occupants until the PCB related work in the Building is completed. This also applies to areas not leased by tenants and to which they have access and to public access areas.</li>   <li>5. Interim BMPs must be conducted biweekly in occupied Buildings and tenant operational areas throughout the duration of activities involving the removal of materials containing PCBs from the Buildings. Interim BMPs must also be conducted biweekly during cleanup of equipment and building substrates contaminated with PCBs. Interim BMPs include and are not limited to thorough cleaning of all surfaces where dust may deposit using HEPA equipped vacuums and cleaning of surfaces with wet cloths.</li> </ol>
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	<p>To verify the effectiveness of BMPs, wipe samples must be collected from surfaces once a month at all areas occupied by tenants or other occupants, and/or accessed by tenants or the public. If the surface wipe samples exceed the wipe sample cleanup goal, the Parties may need to increase the frequency of BMPs. If the surface wipe samples meet the cleanup goal, the Parties may continue biweekly implementation of BMPs. Alternatively, the Parties may propose to EPA a reduction in the biweekly BMP frequency if subsequent wipe samples after reducing that BMP frequency demonstrates the wipe sample cleanup goal is still being met.</p> <p>6. If at any time throughout any given day the maximum allowed air dust target level is exceeded, immediate actions must be implemented to protect tenants (and the public, if present) inside the Buildings. These immediate actions may include decreasing the pace of dust generating activities and / or using dust control measures (e.g., sprayed on polymers if safe, misting without creating runoff outside the Building). In those instances, EPA should be notified the same day of the interim actions implemented by the Parties to assure tenants (and the public if present in the buildings) are protected.</p> <p>7. If the Parties need to make changes to portions of the work sequence approved by EPA, the Parties must notify Carmen Santos (EPA Project Manager, <a href="mailto:santos.carmen@epa.gov">santos.carmen@epa.gov</a>) within 14 days before such changes are implemented. EPA must determine that proposed modifications to the approved work sequence will not result in unreasonable risks to human health and the environment. As a clarification, removal of PCB bulk product present inside the buildings is not covered by this Approval. However, such removal must not result in unreasonable risk to health and the environment.</p>
<p><b>E. PCB Cleanup Plan, Building Interior</b></p>	<p><b>1. Schedule.</b> Within 30 days after receiving the laboratory analytical results for characterization samples, the Parties must submit for EPA review a stand alone draft PCB Cleanup Plan for Building Interior (PCB Cleanup Plan). Characterization samples include porous surfaces (e.g., concrete) bulk samples, wipe and bulk samples associated with bare and coated non-porous surfaces, respectively; and paint on surfaces of fixed equipment (as defined in this approval) remaining inside the Buildings and planned for reuse or disposal. This draft PCB Cleanup Plan must be submitted via email to Carmen Santos (<a href="mailto:santos.carmen@epa.gov">santos.carmen@epa.gov</a>) for discussion before the Parties submit the final PCB Cleanup Plan for EPA approval.</p> <p><b>2. Content.</b> The PCB Cleanup Plan must include and not be limited to the information listed below.</p> <ul style="list-style-type: none"> <li>• Summary of PCB characterization inside the Buildings addressing indoor air (vapor and particulates), bulk dust, porous surfaces, and bare and coated non-porous surfaces. The summary must include all analytical results for each of the materials or media sampled inside each Building.</li> </ul>



- Discussion of PCB sources and impacts to the interior of each Building
- Summary of PCB concentration in coatings on porous and non-porous surfaces
- Summary of biased concrete sampling (cracks and stains on porous surfaces)
- Summary of sampling and analysis results for coating on fixed equipment inside the Buildings
- Procedures for real-time air dust monitoring during PCB cleanup activities that generate dust consistent with Condition B.10.b.2 of this Approval
- Results and discussion of baseline sampling and analysis results for air samples (vapor and particulates), non-porous surface wipes, and porous surface bulk samples
- Figures accurately depicting the location of all Buildings characterized for PCBs
- Figures depicting for each Building the PCB characterization sampling grid
- Figures depicting the location of contaminated porous and non-porous surfaces and related analytical results within each Building
- Decontamination of tools, equipment, and movable equipment to be used in PCB cleanup activities
- Methods for cleanup of PCBs on porous and non-porous surfaces inside the Buildings that will achieve the cleanup levels or goals
- For each Building, tables summarizing the number of proposed cleanup verification samples and figures depicting the location of these samples and associated sampling grid
- Contingencies to be implemented if PCBs are found at levels higher than measured during characterization
- Sampling verification grid for each area within each Building that may need to be re-cleaned and how the grid will be shifted
- Onsite storage of PCB remediation wastes
- Transportation of PCB waste including transportation routes and type of transportation equipment
- Types of PCB cleanup and PCB remediation wastes that will be generated and disposal method
- Cleanup verification sampling and analysis section covering air samples (vapor and particulate), surface wipes for dust, bulk dust (if dust in sufficient quantity), bulk concrete samples, and surface wipes for non-porous surfaces to verify efficacy and effectiveness of the cleanup
- ProUCL statistical and spatial distribution evaluation of analytical results for cleanup verification samples and whether the cleanup meets cleanup levels or goals
- All characterization and cleanup verification analytical results and laboratory reports on CD-ROM for EPA review
- PCB cleanup completion report
- Reference to Short-Term Post PCB Cleanup Sampling and Best Management Practices Plan and Long-Term Post PCB Cleanup Sampling and Best Management Practices Plan (to be submitted as stand alone documents, see Conditions F and G)

- Restrictive land use covenant

### 3. PCB Cleanup Verification

- Concrete floors inside the Buildings must be sampled for cleanup verification consistent with Condition B.10.d. but using a smaller grid than used for characterization. If the same grid size used for characterization is used for cleanup verification sampling, the grid must be offset or shifted; and cleanup verification sample locations must not coincide with the characterization sample locations.
- Trenches, pits, and other areas inside the Buildings. The Parties must propose a cleanup verification grid that will yield samples representative of the size of the trenches and pits where cleanup verification sampling will be conducted. The Parties must also collect biased concrete cleanup verification samples in trenches and pits.
- Cleanup verification concrete samples must be collected from Building walls and columns consistent with Condition B.10.d. but using a sampling grid size smaller than the grid used for characterization. The Parties must propose the size of the cleanup verification grid for these surfaces. The location of cleanup verification samples must not coincide with the location of characterization samples. If the Parties decide to use for cleanup verification the characterization grid used for concrete walls and columns, the grid must be offset or shifted so that cleanup verification samples are not collected in the same area as the characterization samples. For vertical concrete surfaces (walls and columns), cleanup verification samples must be collected in those surfaces verified via characterization sampling to be a PCB remediation waste.
- Steel Superstructures. Discrete wipe samples must be collected at every 40 feet of steel member length verified to be a PCB remediation waste based on characterization samples. However, sample locations must be selected at random to allow for different sides of the surfaces to be sampled. Surface wipe analytical results must be equal to or below 5 ug total PCBs/100 cm. square. The Parties must reclean accessible non-porous surfaces that may pose a direct risk of exposure to PCBs if wipe samples exceed 5 ug/100 cm square.
- A table that summarizes and figures to scale that depict all analytical results for each type of interior concrete surface (e.g., separately for walls, floors, trenches) and non-porous surfaces at each Building must be provided to EPA together with a CD-ROM that contains the laboratory analytical reports and chain of custody forms. This information, considered to be preliminary data until validated by a third party, must be submitted to EPA within 30 days after the Parties receive the analytical laboratory results. Third Party cleanup verification data validation reports for porous and non-porous surfaces

must be submitted to EPA within 45 days and no later than 60 days after the Parties receive the laboratory analytical reports.

f. The analytical results for concrete cleanup verification samples must be evaluated consistent with Condition B.10.d. Figures to scale that depict the location of each cleanup verification sample must be used to evaluate the spatial distribution of the analytical results. However, the analytical results for grid and biased concrete samples must be input separately into the Pro-UCL program to separately calculate the 95% UCL of the mean of grid and biased analytical results. For each Building, separate calculations must be conducted for concrete floors, each wall, each column, trenches, and pits. Depending on the results of ProUCL calculations and spatial distribution evaluations of cleanup verification data, EPA may require the Parties to collect additional cleanup verification samples; or EPA may preliminarily determine the cleanup of the various types of concrete surfaces is complete.

g. The Parties must submit quarterly cleanup progress reports to EPA throughout the duration of cleanup activities. If any issues arise within any given quarter that require a decision by EPA, the Parties must notify EPA in a timely manner of such situation and describe the situation and resolution reached in the quarterly progress report.

#### **4. On-Site Storage of PCB Wastes**

##### **a. PCB Remediation Waste, Total PCBs equal to or above 50 ppm**

1. PCB remediation waste must be stored consistent with the requirements in 40 CFR 761.65. Under this Approval, EPA is extending the 30-day (from the date of waste generation) timeframe in 40 CFR 761.65(c)(1) to store PCB remediation wastes in containers to 180 days (from the date of waste generation) provided all applicable requirements in that subparagraph and 40 CFR 761.65(c)(2) through (c)(6) are met.

2. All other applicable requirements in 40 CFR 761 including and not limited to labeling, marking, manifesting of the waste, notification of PCB activity (EPA Form 7710-53), and records must be followed in addition to all applicable state and local requirements.

3. In this approval, EPA is extending the 30-day timeframe in 40 CFR 761.65(c)(1) to store liquid waste that may contain PCBs at levels equal to or above 50 ppm in tanks to 60 days after the date of generation provided all the applicable requirements in 40 CFR 761.65(c)(1) through (c)(6) are met and the containers are inspected daily and do not leak.

**b. PCB Remediation Waste, Total PCBs below 50 ppm**

1. EPA recommends storage of these wastes be conducted in same manner as in Condition E.4.a.

**c. PCB Remediation Wastes, Water exceeds 0.5 ug total PCBs/L and contains less than 50 ppm PCBs**

1. Storage of this waste must comply with all the applicable requirements in 40 CFR 761.65(c) in addition to all other applicable requirements in 40 CFR 761 including and not limited to labeling, marking, and manifesting, and all applicable state and local requirements.
2. In this approval, EPA is extending the 30-day timeframe in 40 CFR 761.65(c)(1) to store liquid waste that may contain total PCBs at levels below 20 ppm (in this case, contaminated water) in DOT approved containers to 60 days after the date of generation provided all the applicable requirements in 40 CFR 761.65(c)(1) through (c)(6) are met and the containers are inspected daily and do not leak.

**5. Waste Transportation and Routes, Disadvantage Communities**

**a. Transportation Containers for Waste Containing PCBs**

1. All waste must be placed in appropriate DOT containers for transportation consistent with all applicable requirements in 40 CFR 761 and including those in 40 CFR 761.65 and 40 CFR 761, Subpart K.

**b. PCB Waste Transportation Routes and Environmental Justice**

1. The Parties have estimated about 228 truckload loads will be necessary to remove the PCB waste from the RAAP. EPA strongly recommends that transportation routes be developed and proposed taking into consideration Environmental Justice concerns identified in the attached EJSscreen report. As part of the route proposal, identify the commercial sites to where the wastes will be transported for offsite disposal.
2. Consistent with EPA's Greener Cleanups Policy, we strongly recommend that construction equipment and trucks to be used for the transport of wastes from the RAAP to the disposal site be equipped with emission control technology. Please schedule a conference call with Karen Scheuermann of EPA (415-972-3356) to go over approaches the Parties may consider to reduce the carbon footprint associated with the PCB cleanup.

**6. Disposal of Wastes Containing PCBs**

**a. PCB Remediation Waste (e.g., concrete contaminated by PCBs from liquid or non-liquid sources)**

1. These wastes must be characterized for disposal and disposed consistent with 40 CFR 761.61(a)(5) all other applicable requirements in 40 CFR 761 (not limited to labeling and marking); and applicable state and local requirements.

2. If not sampled for disposal, PCB remediation waste may be disposed based on the assumption that PCBs are present at levels equal to or above 50 ppm. Each piece of equipment must be sampled separately. Discrete paint samples from the same piece of equipment may be composited and the composite sample not to exceed three discrete paint samples.

**b. PCB Cleanup Wastes**

1. These wastes must be disposed consistent with 40 CFR 761.61(a)(5) and all other applicable requirements in 40 CFR 761; and applicable state and local requirements.

**c. Liquid PCB Remediation Wastes**

1. Water to be generated during cleanup activities must be disposed consistent with the requirements in 40 CFR 761.61(b) or 761.79(b)(1); and other applicable requirements in 40 CFR 761; and applicable state and local requirements. The water must be analyzed for all the Aroclors, including Aroclor 1268.

2. If paint and/or Galbestos particles are not removed from the water before storage of the water in tanks, the sediments in the tanks must be disposed as a PCB bulk product waste consistent with the applicable requirements in 40 CFR 761.62, any other applicable requirements in 40 CFR 761, and all applicable state and local requirements.

**d. PCB Waste Generated During Removal of Paint**

1. Waste generated during paint removal must be disposed consistent with applicable requirements in 40 CFR 761.79, other applicable requirements in 40 CFR 761, and all state and local applicable requirements.

**7. Restrictive Land Use Covenant for Remaining PCBs Inside RAAP Buildings**

a. Within 90 days after EPA accepts the cleanup verification sampling data (i.e., third-party validated analytical results for concrete, non-porous surfaces, and air samples) for the Buildings, the Parties must submit a draft LUC to EPA for review. The draft LUC must include (1) provisions to address PCB contamination that may remain inside the Buildings and (2) if necessary, plans for long-term sampling and best management practices to be implemented inside the Buildings. Within the 90-day timeframe, the Parties must also confer and discuss with EPA the elements that will be included in the LUC.

<b>F. Short-Term PCB Post Cleanup Sampling and Best Management Practices Plan</b>	<ol style="list-style-type: none"> <li>1. Within 45 days after the date when EPA determines the PCB cleanup inside Buildings is complete, the Parties must submit a Short-Term PCB Post Cleanup Sampling and Best Management Practices Plan (Short-Term Post Cleanup Plan) for EPA approval.</li> <li>2. The Short-Term Post Cleanup Plan must contain the sampling, extraction, analytical methods to collect bulk dust, surface wipe and air (vapor and particulate) samples; and the number and frequency at which those samples will be collected during the initial two-year post-cleanup period. These samples will also serve to verify the efficacy of best management practices (BMPs). Bulk dust samples must be collected only if present in sufficient quantity to collect a representative sample.</li> <li>3. The Short-Term Post Cleanup Plan must identify and describe the BMPs that will be implemented during the initial two-year post cleanup period and frequency of implementation. If any PCBs remain in place at the RAAP above the cleanup level, inspection together with repair and monitoring (i.e., surface wipes and air samples) of those areas must be included as part of the BMPs to be implemented inside buildings. Contingencies to increase the frequency or implement additional BMPs must be included in the Short-Term Post Cleanup Plan to address situations when air or surface wipe samples demonstrate a need for more frequent or additional BMPs.</li> <li>4. If any non-tenant occupied spaces in the Buildings are planned for occupancy after EPA determines the PCB cleanup is complete, the air and surfaces in those spaces must be tested consistent with Condition E.</li> <li>5. The Parties must propose criteria in the Short-Term Post Cleanup Plan to determine the frequency and number of air and surface wipe samples to be collected and frequency and type of BMPs to be implemented for the long-term inside RAAP buildings. Third party validated air (separate vapor and particulates) and surface wipe data collected during the initial two-year post-cleanup period (Short-Term Post Cleanup Plan) must be evaluated in context to the implemented BMPs. Depending on the quality, accuracy, and completeness of the Parties data validated by a third party, that evaluation must be used by the Parties as part of the information to justify the reevaluation criteria for long-term sampling and BMPs. Refer to Condition G, Long-Term Post PCB Cleanup Sampling and Best Management Practices Plan.</li> </ol>
<b>G. Long-Term PCB Post Cleanup Sampling and Best Management Practices Plan</b>	<ol style="list-style-type: none"> <li>1. If based on Condition H.5, Short-Term Post Cleanup Plan implementation results, and other relevant information EPA determines that long-term monitoring is necessary, within 45 days after that determination, the Parties must submit a stand-alone Long-Term Post PCB Cleanup Sampling and Best Management Practices Plan (Long-Term Post Cleanup Plan). If based on the information described in this condition, the Parties believe that long-term monitoring is not necessary, refer to Condition G.8.</li> </ol>

2. The Long-Term Post Cleanup Plan must contain the sampling, extraction, and analytical methods that will be used during the long-term post cleanup period consistent with Condition B.
3. The Long-Term Post Cleanup Plan must identify and describe the type of sampling and type of BMPs that will be implemented after the two-year PCB post cleanup period (Short-Term Post PCB Cleanup Plan). In addition, a schedule to implement the sampling and BMPs must be included by the Parties in the Long-Term Post Cleanup Plan.
4. If any PCBs remain in place inside the Buildings above the cleanup levels, inspection together with repair of those areas must be included as part of the BMPs to be implemented inside the Buildings. The BMPs also include and are not limited to thorough cleaning using HEPA-equipped vacuums and wet cloths inside the Buildings where PCBs remain in place. In addition, surface wipe samples and air samples must be collected to monitor the effectiveness of the BMPs.
5. The number of air (separate vapor and particulates) samples and surface wipe samples to be collected for the long-term to verify effectiveness of BMPs and the frequency and type of BMPs to be implemented for the long-term must be provided in the Long-Term Post Cleanup Plan.
6. Contingencies to increase the frequency or implement additional BMPs must be included in the Long-Term Post Cleanup Plan to address situations when air samples or surface wipe samples demonstrate a need for more frequent or additional BMPs. Contingencies to increase the number of air and / or surface wipe samples must also be included in the Long-Term Post Cleanup Plan.
7. The Parties may propose in the Long-Term Post Cleanup Plan a criteria to reevaluate the frequency of long-term sampling and BMPs implementation at the end of the first year during which these long-term post cleanup activities were conducted. The Parties must submit the reevaluation criteria and the new proposed Long-Term Post Cleanup sampling and BMP implementation schedule within 45 days after the end of the first year of Long-Term Post Cleanup Plan implementation.
8. If the Parties believe that long-term monitoring is not necessary based on Condition H.5, the results of Short-Term Post Cleanup Plan implementation, and other relevant information, the Parties must submit a proposal to terminate long-term monitoring in specific Buildings or all Buildings to EPA. The Parties must provide all the necessary justifications for each Building such as sampling and analysis data (validated by third party), data evaluation, and Building-specific health risk evaluation to support their proposal to terminate long-term monitoring. Based on this information, EPA will determine if terminating long-term monitoring will result in no unreasonable risks to Building occupants.

<b>H. PCB Cleanup Completion Report – Building Interior</b>	<p>1. Within 45 days after the completion of cleanup (i.e., EPA has accepted third party validated analytical results for all cleanup verification samples and recleaning is not necessary) inside each Building, the Parties must submit Building-specific draft interim cleanup completion reports documenting all the cleanup activities, achievement of cleanup goals or levels, PCBs remaining after cleanup, figures and maps depicting location and levels of PCB contamination remaining inside the Buildings, tables summarizing all additional Building and fixed equipment characterization data, CD-ROM providing electronic copies of all laboratory analytical results for all samples collected under this Approval, and PCB waste disposal. EPA will make a preliminary determination of the completion of PCB cleanup inside the Buildings based on the completeness, quality, and acceptability of cleanup verification analytical results and sampling data. Within 30 days after EPA's determination, the Parties must submit the final interim Building specific PCB cleanup completion report.</p> <p>2. Within 90 days after the completion of cleanup (i.e., EPA has accepted third party validated analytical results for all cleanup verification samples and recleaning is not necessary) inside the last Building, the Parties must submit a final comprehensive PCB cleanup completion report for all the Buildings combined that includes the results of the final round of cleanup verification samples inside each of all the Buildings. Such sampling results must demonstrate and assure EPA that Buildings previously reported in the interim cleanup completion reports as been cleaned up were not recontaminated by subsequent cleanup of other Buildings. The final comprehensive PCB cleanup completion report must also include the same information as required in Condition H.1 summarized for each Building and cross referencing the interim Building-specific PCB cleanup completion reports.</p>
<b>I. Disposal or Reuse of Fixed Equipment Currently and / or Previously Owned by the U.S. Army</b>	<p><b>1. Painted Fixed Equipment</b></p> <p>a. Each piece of remaining fixed equipment must be sampled separately. Discrete paint samples from the same piece of equipment may be composited and a maximum of three discrete paint samples may be composited if the equipment is to be disposed of.</p> <p>b. For equipment inside the Buildings that the Parties propose to reuse in place, discrete paint samples must be collected from each piece of fixed equipment that are representative of the paint coating(s) and individually analyzed. Refer to Condition B (Revised SAP) for sampling of paint.</p> <p><b>2. Unpainted Fixed Equipment or Fixed Equipment with Paint Removed</b></p> <p>a. Each piece of remaining fixed equipment must be sampled separately.</p>



	<p>b. If the equipment will be disposed of, discrete surface wipe samples from the same piece of equipment may be composited and the composite sample not to exceed three discrete wipe samples. For very large pieces of equipment (each piece weighs several tons), discrete wipe samples may be composited and a maximum of five (5) discrete samples may be composited if the equipment will be disposed of.</p> <p>c. For fixed equipment inside the Buildings that the Parties propose for reuse inside the Buildings where the equipment is located, discrete samples representative of the surfaces of the equipment must be collected and analyzed individually.</p> <p><b>3. Reuse or Disposal.</b> Cleanup for reuse; and storage for transportation, transportation for disposal, and disposal of fixed equipment must be consistent with this Approval.</p>
<p><b>J. Inventory of Remaining Equipment, Fixed and Not Fixed</b></p>	<p>1. Within 45 days after the date of this approval, a complete inventory of all equipment (fixed and not fixed) remaining at the RAAP that may be contaminated with or contains PCBs must be submitted to EPA consistent with EPA's September 4, 2012 conditional Approval (as amended on October 29, 2012 and July 16, 2013) of the Parties Phase 1 PCB Cleanup Work application. The inventory, including Army currently or previously owned remaining equipment, must describe each item, location at the RAAP where the item is located, construction material (e.g., metal), if the item is painted, analytical results for the paint/piece of equipment, and preliminary disposition of the equipment (i.e., disposal or reuse). In the preliminary disposal determinations, the Parties must identify if the equipment is a PCB item (as defined in 40 CFR 761.3), PCB remediation waste, or PCB bulk product waste and include the disposal requirements that will be followed for disposal.</p> <p>2. Cleanup for reuse; and transportation for disposal and disposal of equipment that is not fixed equipment must be consistent with EPA's September 4, 2012 conditional Approval (as amended) of the Parties Phase 1 PCB Cleanup Work application.</p>





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105

Via Email and U.S. Postal Service

JUL 22 2015

Mr. Warren Switzer  
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Mrs. Debbie Olson, Executive Director  
Riverbank Local Redevelopment Authority  
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dolson@riverbanklra.org

**Subject: Riverbank Army Ammunition Plant Polychlorinated Biphenyls (PCBs) – EPA Risk-Based Cleanup Approval, Toxic Substances Control Act, Phase 2 Work**

Dear Mr. Switzer and Mrs. Olson:

Thank you for the February 6, 2015 letter submitted via email by the U.S. Army (Army) with its accompanying "Sampling and Analysis Plan" as the revised risk-based PCB cleanup application.<sup>1</sup> The U.S. Environmental Protection Agency Region 9 (EPA) required the application under 40 CFR 761.61(c). This application is for the Phase 2 PCB cleanup work (Phase 2 Work) to be conducted in the interior of buildings at the Riverbank Army Ammunition Plant (RAAP). In May and June 2015, EPA discussed the results of its review of the application with the Army and Weston Solutions, Inc. Subsequent to those discussions, Weston submitted (1) supplemental information that EPA requested and (2) proposed significant revisions to the application (Weston's June 26, 2015 email) via email.

EPA has considered the supplemental information and proposed revisions to the application and it is approving portions of the application as amended by the June 26, 2015 email. Enclosed is EPA's approval with conditions (Approval) consistent with requirements for risk-based disposal approvals in

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<sup>1</sup> The original application was submitted by the U.S. Army in letter format dated June 26, 2014. Based on its review and substantial comments, EPA requested a revised application at a September 11, 2014 meeting with the U.S. Army and Local Redevelopment Authority.

40 CFR 761.61(c). As specified in the Applicability section, the Approval is only applicable to PCB remediation wastes inside buildings at the RAAP.

EPA is issuing the Approval jointly to the Army, as the current owner of the RAAP, and the Riverbank Local Redevelopment Authority (RLRA), as lessee and party responsible for operation, maintenance, and environmental cleanup of the RAAP.<sup>2</sup> Therefore, in this letter and the Approval, EPA refers jointly to the Army and the RLRA as the "Parties." The Parties must implement the Approval effective immediately.

On July 16, 2015 we shared draft conditions of approval with the Army and Weston. On July 21, 2015, we discussed with the Army and Weston specific issues related to the draft conditions. Specific conditions of approval were modified by EPA subsequent to that discussion. The Army and the RLRA may request in writing modifications to conditions of Approval consistent with Section VII of the Approval.

The Approval does not cover any PCB bulk products (e.g., Galbestos, paint) present in buildings at the RAAP. Based on EPA's review of information provided by Weston, PCB sources at the RAAP include Galbestos (wall and roof panels), paint, and oils from hydraulic and electrical equipment. Surfaces within the RAAP (e.g., concrete) are contaminated with PCBs from these sources and such surfaces are PCB remediation wastes. Soils and sediments at the RAAP are contaminated with PCBs; and these contaminated media are being addressed under EPA Superfund oversight. The Approval also does not cover any surfaces outside (e.g., court yards) the RAAP buildings that may be impacted by PCBs.

This Approval applies to and covers PCB remediation wastes inside RAAP buildings including cleanup and offsite disposal, interim actions (e.g., best management practices such as thorough cleaning) inside buildings to assure protection of tenants, land use restrictions, and long-term post-cleanup actions (thorough building cleaning, surface wipe and air sampling).

Finally, the PCB regulations in 40 CFR 761.61(c) require that EPA make a determination of no unreasonable risk of injury to health or the environment in connection to its risk-based cleanup approvals. While we believe the cleanup described in the application as modified by the Approval will meet the cleanup goals, we do not have enough data or information to make a final determination. Therefore, we are deferring a final written determination until after we receive the necessary data required in the Approval. If at that point we determine that additional cleanup actions are required, EPA will issue a supplemental approval to the Parties containing such requirements.

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<sup>2</sup>The RLRA has subleased building space within the RAAP to about 11 tenants.

Mr. Warren Switzer and Mrs. Debbie Olson  
EPA Conditional Approval  
Riverbank Army Ammunition Plan

We look forward to the Parties implementing the Approval. If you have questions concerning this letter, or the enclosed Approval, call Carmen D. Santos, Region 9 PCB Coordinator, at 415.972.3360.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Scott", with a stylized flourish at the end.

Jeff Scott, Director  
Land Division

Enclosures

Cc: John Woodyard, Weston Solutions, Inc.



JUL 22 2015

Enclosure 1

**EPA Region 9 Toxic Substances Control Act PCB Cleanup Approval, 40 CFR 761.61(c)  
Riverbank Army Ammunition Plant, Phase 2 PCB Cleanup Application**

**I. Introduction**

On February 11, 2015, the U.S. Environmental Protection Agency Region 9 (EPA) received via email the U.S. Army's (Army's) February 6, 2015 letter (Subject: "Request for a Toxic Substances Control Act (TSCA) Risk-Based Approval; Phase 2 Building Decontamination and Panel Removal at the former Riverbank Army Ammunition Plant") intended to be the Army's revised application requested by EPA to be submitted consistent with 40 CFR 761.61(c), risk-based disposal approval. The revised application (including the "Sampling and Analysis Plan") is for the Phase 2 cleanup work (Phase 2 Work) to be conducted in buildings at the Riverbank Army Ammunition Plant (RAAP or "Facility").

In May and June 2015, EPA discussed its comments on the application with the Army and Weston Solutions, Inc. (Weston) as consultant for Riverbank Local Redevelopment Authority (RLRA). The Application was subsequently amended by Weston's June 26, 2015 email to EPA. EPA is approving portions of the revised amended application (Application) consistent with the requirements for risk-based disposal approvals in 40 CFR 761.61(c) and with the conditions established in Tables 1 and 2 of this Approval.

The RAAP is listed in EPA's Superfund National Priority List. The overall facility cleanup will be conducted by the Army and the RLRA with oversight by EPA's Superfund Program, Army Corp of Engineers, and other agencies such as the California Department of Toxic Substances Control (DTSC). The RAAP is a Base Realignment and Closure site and the Army plans on transferring the site to the RLRA through a no-cost Economic Development Conveyance.

**II. Parties Implementing this Approval**

The Army is the current owner of the RAAP. The RLRA is responsible, as of April 1, 2010, for the operation and maintenance of the RAAP via a lease agreement between the RLRA and the Army. The RLRA has sub-leased space within the RAAP buildings to about 11 tenants identified in the attached table. In addition, the Army privatized the cleanup of the RAAP and the RLRA is the party that will conduct the cleanup (including TSCA PCBs).

Therefore, EPA is issuing this Approval jointly to the Army, as the current owner of the RAAP, and the RLRA, as the party executing the cleanup. This Approval refers jointly to the Army and RLRA as the "Parties." The Parties are responsible for implementing this Approval and any future amendments that may be necessary. This Approval is effective immediately.

### **III. Facility Background and PCB Sources**

The RAAP is located in the city of Riverbank, California. The Facility was built in 1942. In 1943 it began operations as an aluminum reduction plant for military supplies. The Facility closed in 1944 and was used as a storage facility until 1952. Norris Industries operated the Facility in 1952 under contract to the Army to produce cartridge cases for land and naval artillery. This production was going on during the Korean, Vietnam, and Middle East wars. The RAAP was closed on March 31, 2010; and several metal parts fabrication capabilities were transferred from the RAAP to the Army's Rock Island Arsenal facility in Illinois.

Based on limited information provided to EPA, sources of PCBs at the RAAP include Galbestos, paint, and oils in hydraulic, electrical, and compressor equipment.

### **IV. Applicability**

#### **A. PCB Bulk Product**

The roof and walls of several buildings within the RAAP consist of Galbestos panels. PCBs as Aroclors 1260 and 1268 are present in Galbestos at the RAAP at levels above 50 milligram/kilogram (ppm). Paint inside the buildings (e.g. on the steel superstructures, walls) contain PCBs above 50 ppm. The Galbestos panels and paint (inside the buildings and possibly on certain equipment located in the buildings) are PCB bulk product. These materials are regulated for disposal without an EPA approval under 40 CFR 761.62(a) or (b); and 40 CFR 761.65(c)(9) establishes requirements for onsite storage of PCB bulk product waste to facilitate transportation for offsite disposal.

This approval is issued under 761.61(c) and only applies to PCB remediation wastes. The PCB regulations do not authorize the use of PCB bulk products. This Approval does not authorize the continued use of PCB bulk product in any building at the RAAP where those products are and/or may be present. This Approval does not cover and it is not applicable to any PCB bulk product that may remain at the RAAP. In addition, this Approval does not cover and it is not applicable to onsite storage of PCB bulk product waste (e.g., Galbestos panels) or any changes to the storage requirements established in 40 CFR 761.65 for that waste.

#### **B. PCB Remediation Wastes**

This Approval is applicable to and covers sampling, cleanup, and offsite disposal of PCB remediation wastes present inside buildings at the RAAP and PCB remediation wastes anticipated to be generated during cleanup of these buildings. Porous (e.g., concrete) and non-porous (e.g., metal) surfaces are contaminated inside buildings at the RAAP due to sources such as Galbestos, paint, and oils in hydraulic and electrical equipment that contain PCBs.



This Approval does not cover characterization sampling and cleanup of porous (e.g., concrete in exterior building court yards) and non porous (e.g., metal) surfaces that may be contaminated with PCBs outside the RAAP buildings. This Approval does not cover characterization sampling and cleanup of soil and sediments that may be contaminated with PCBs within and/or beyond the RAAP.

### **C. Sampling for Remedial Worker Safety**

This Approval does not cover monitoring of workers involved in the PCB cleanup within or outside the exclusion zone and any type of sampling (e.g., air sampling) associated with work place monitoring in connection with those workers.

### **D. National Emission Standards for Hazardous Air Pollutants (NESHAPs) and Asbestos**

This Approval does not cover any matters involving asbestos in Galbestos and NESHAPs or San Joaquin Valley Unified Air Pollution Control District requirements that may be applicable to Galbestos.

### **E. Cleanup of Fixed or Movable Equipment Inside RAAP Buildings**

This Approval does not cover removal of bulk product from fixed or movable equipment still present inside buildings at the RAAP.

However, in order to determine disposal requirements applicable to equipment that may be coated with paint, sampling of the coating is covered by this Approval; and where applicable, sampling of the interior of the equipment (e.g., equipment that contains oil) is also covered. This sampling is also necessary to make reuse decisions concerning the equipment. The use authorization in 40 CFR 761.30(u) establishes that any person may use equipment previously contaminated with PCBs from regulated sources if such equipment is properly decontaminated consistent with certain provisions in the PCB regulations.

### **F. "Standards," Elements of the "application," and "application amendment"**

The revised February 6, 2015 application and the June 26, 2015 application amendment refer to "standards" that will be applied to the cleanup of various surfaces. The PCB concentrations proposed in these documents for that purpose are not generally established standards but rather are risk-based cleanup levels or goals.

### **1. Application, Section 3.0 (Proposed Remedial Approach, Standards, and Sampling Frequency.**

**a. Interior Building Surface Cleaning – Above 8 feet.** Removal and disposal of PCB bulk product (paint) is not covered by this Approval. PCB bulk product that may remain inside the buildings is not covered by this Approval. Cleanup levels for porous and non-porous substrates contaminated with PCBs (PCB remediation wastes) were superseded by the June 26, 2015 application amendment. EPA

is approving those levels with conditions. However, remediation of substrate above 8 feet was not proposed in the application and application amendment.

**b. Interior Building Surface Cleaning - Below 8 feet.** Removal and disposal of PCB bulk product (paint) is not covered by this Approval. Cleanup levels for porous and non-porous substrates contaminated with PCBs (PCB remediation wastes) were superseded by the June 26, 2015 application amendment. EPA is approving the June 26, 2015 cleanup levels with conditions. The "Remediation Methods" are not approved cleanup options and need further evaluation to prevent risks to tenants. EPA has requested a Cleanup Plan be submitted.

**c. Floor Surfaces (concrete) and Pits and Trenches (concrete) inside buildings.** The cleanup levels and sampling frequency for these surfaces are superseded by the June 26, 2015 application amendment. EPA is approving the cleanup levels with conditions. The "Remediation Methods" are not approved as characterization for concrete surfaces is incomplete and cleanup options need to be further evaluated to prevent risks to tenants. EPA has requested a Cleanup Plan be submitted.

**d. Fixed Equipment (presses) inside buildings.** 40 CFR 761.30(p) does not apply to equipment. Refer to Item IV.E, above. EPA has approved a cleanup level or goal and sampling frequency with conditions if the equipment is PCB remediation waste.

**2. Application, Section 4.0, Galbestos Panel Removal and Disposal.** This Approval does not cover removal, onsite storage, transportation, and offsite disposal of Galbestos (PCB bulk product). In addition, refer to Items IV.A, C, and D, above. Cleaning activities to remove dust are approved with conditions. Air monitoring outside building perimeter is not covered by this Approval except when upwind and downwind air sampling is necessary when conducting air sampling inside the buildings.

**3. Application, Section 5.0, Air Monitoring and Decontamination Standards.** The June 26, 2015 application amendment superseded air monitoring proposed in this section. EPA is approving air monitoring activities with conditions. The proposal to discharge water used during cleanup to the local Publicly Owned Treatment Works (POTW) based on a PCB level equal to or below 3 ug/L is not approved. The Parties must consult with the POTW before the water is discharged. Such discharge must be based on the POTWs permitted discharge limit for PCBs if more stringent than the TSCA PCB limit in 40 CFR 761.79 (b)(1)(ii).

**4. Application, Section 6.0, Other Health and Safety Protocols.** The Approval does not cover health and safety matters related to remediation workers and matters regulated by the Federal and state Occupational Safety and Health Administration.

**5. Application, Section 7.0, Sampling and Analysis.** This document was submitted in draft. The June 26, 2015 application amendment also applies to the sampling and analysis plan (SAP) attached to the application. Items IV.F.1 through F.4 apply to the SAP as the same issues are discussed in the SAP.

EPA is requiring that a final revised SAP be submitted that is responsive to certain conditions of this Approval.

**6. Application, Section 8, Work Sequencing and Scheduling.** This document was submitted in draft and with the exception of the work sequence, the document is repetitious of content included in the application and SAP. EPA has included conditions concerning the proposed work sequence.

**7. Application, Long Term Restrictions and Monitoring.** The Approval contains conditions that modify this section.

## **V. Conditions of Approval**

Refer to the attached Table 1, General Conditions of Approval (Attachment 1) and Table 2, Specific Conditions of Approval (Attachment 2). The Conditions of Approval modify the application dated February 6, 2015 and accompanying draft Sampling and Analysis Plan and draft Sequence and Approach document attached to the Sampling and Analysis Plan; and the June 26, 2015 proposal for concrete, air, and surface sampling submitted by Weston to EPA via email.

## **VI. Compliance with this Approval and Applicable Regulations**

The Parties must comply and implement all the conditions in this Approval.

This Approval does not relieve the Parties and their consultants from complying with other applicable TSCA PCB and Federal regulations, or state and local regulations and permits. Departure from this Approval without prior written permission from EPA may result in revocation of this Approval. If additional information demonstrates that EPA cannot make a no unreasonable risk determination, EPA will modify or revoke this Approval. Nothing in this Approval bars EPA from imposing penalties for violations of this Approval or for violations of other applicable TSCA PCB requirements or for activities not covered in this Approval.

This Approval does not cover further requirements that may be imposed by state (e.g., DTSC), county and local regulatory agencies, and EPA's Superfund Program regarding cleanup of PCBs at the RAAP or in relation to the PCB cleanup work covered by this Approval.

## **VII. Amendments to this Approval**

The Parties may request in writing to EPA modifications to specific conditions in this Approval. In requesting a modification, include the reasons for the request and justification for a proposed modification. The Parties may schedule a conference call with EPA to discuss any proposed modification. EPA will make a decision on the request and discuss such decision with the Parties before the specific Condition of Approval is amended by EPA.

**Riverbank Army Ammunition Plant – EPA Region 9 Conditional Approval for Phase 2 PCB Cleanup Work**

**Table 1: General Conditions of Approval**

Elements of Approval Table 1: General Conditions	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
<b>A. Revised Sampling Plan, Air Best Management Practices During Galbestos Removal, Real-Time Air Monitoring, Interim Actions, Post Cleanup Sampling</b>	<ol style="list-style-type: none"> <li>1. <b>Revised Sampling and Analysis Plan</b> <ol style="list-style-type: none"> <li>a. Within 60 days after the date of this Approval submit a revised sampling and analysis plan (Revised SAP) that is responsive to all the conditions of approval involving sampling and analysis related to air, dust, porous, and non-porous surfaces. These Conditions include and may not be limited to Condition D in Table 1 of this Approval; and in Conditions B, C, D, E, G, and I in Table 2 of this Approval.</li> </ol> </li> <li>2. <b>General Conditions for Air, Best Management Practices, and Interim Actions for EPA Approval</b> <ol style="list-style-type: none"> <li>a. The air sampling elements of the Revised SAP must include information such as and not limited to data quality objectives, number of air samples for each phase described in the conditions that follow and presented in tables for each individual building within the RAAP, figures depicting sampling locations within tenant operational areas, list of all buildings where air sampling will be conducted, risk-based air levels to be achieved and specified in Condition D (Table 1) below, measures to prevent potential breakthrough of the PUF sampler and quartz filter, extraction and analytical methods, real-time air sampling methods, submission of real-time air sampling data when maximum air dust volumes are exceeded together with description of measures taken to lower dust levels, submission of preliminary laboratory data immediately after received by the Parties, submission of laboratory validated (Level 3) air data on CD-ROM within 30 days after validated, and description of best management practices (BMPs) to be implemented together with implementation schedule and number and type of samples associated with BMPs.</li> </ol> </li> <li>3. <b>Before Removal of Galbestos, Paint, and Remaining Equipment</b> <ol style="list-style-type: none"> <li>a. All tenant occupied buildings and areas with public access must be sampled. Indoor air, surface wipes, and bulk dust samples must be collected within tenant operational areas. EPA will use the data, to be collected via implementation of this condition, in making a no unreasonable risk determination. This data must be made available to EPA immediately as received by the Parties and identified as preliminary data. Level 3 validated data must be submitted to EPA within 30 days after the Parties' submission to EPA of preliminary indoor air, surface wipe, and bulk dust data. In addition, refer to Specific Conditions in Table 2 for more details.</li> </ol> </li> </ol>

Elements of Approval Table 1: General Conditions	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
	<p><b>4. During Removal of Galbestos, Paint, Cleaning of Equipment, and Cleanup</b></p> <p>a. Real-time monitoring for dust must be conducted in all tenant-occupied buildings (within tenant operational areas) and public access areas on a daily basis during removal of Galbestos, paint, and during cleanup (e.g., PCB remediation activities). This data must be submitted and summarized in the final cleanup completion report to EPA. However, if at any time throughout any given day the maximum allowed air dust volume is exceeded, preventative measures must be taken to protect tenants (and the public, if present) inside the buildings. In those instances, EPA should be notified the same day of the measures implemented by the Parties to assure tenants (and the public if present in the buildings) are protected. In addition, refer to Specific Conditions in Table 2 for more details.</p> <p>b. Interim actions including best management practices such as thorough cleaning must be conducted on a daily basis in all tenant-occupied buildings and public access areas. Surface wipe samples must be collected once a week from readily available surfaces. Depending on surface wipe results, air sampling may be necessary and required. In addition, refer to Specific Conditions in Table 2 for more details.</p> <p>c. Within 15 days after the date of this Approval, provide clarification on the measures that will be taken to isolate tenant-occupied areas during removal of Galbestos panels and paint.</p> <p><b>5. Post Cleanup (Galbestos Removal, Paint Removal, and Equipment Cleaning Completed Before Cleanup)</b></p> <p>a. Air samples must be collected from all buildings within the RAAP including tenant-occupied buildings and public access areas.</p> <p>b. Surface wipe (and bulk dust, if available) samples must be collected from all buildings within the RAAP including tenant occupied buildings and public access areas.</p> <p>c. Scope and schedule for long-term air sampling and best management practices (BMPs) must be provided by the parties within 45 days after post-cleanup sampling is completed. A frequency for surface wipe samples to be collected to verify effectiveness of BMPs must be included in the long-term air sampling and BMP plan. In addition to other data, this information will be used by EPA to develop specific long-term conditions to be incorporated into the LUC. The Parties may propose criteria to re-evaluate the need for additional sampling inside RAAP buildings at the end of the second year of the two-year post cleanup air sampling period. Third party validated</p>

Elements of Approval Table 1: General Conditions	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
	<p>results of all sampling conducted during the two-year post-cleanup period must be evaluated and be used as part of the information to justify the reevaluation criteria.</p>
<p><b>B. Work Sequence</b></p>	<p><b>1. Sequence and Approach</b></p> <p>a. Within 15 days after the date of this approval, confirm the sequence for all the work that will be conducted including the PCB cleanup work. The sequence described in the application is not consistent with the sequence the Parties discussed with EPA during the June 2015 conference calls.</p>
<p><b>C. Waste Transportation and Routes, Disadvantage Communities</b></p>	<p><b>1. Transportation Containers for Waste Containing PCBs</b></p> <p>a. All waste must be placed in appropriate DOT containers for transportation consistent with all applicable requirements in 40 CFR 761 and including those in 40 CFR 761.65 and 40 CFR 761, Subpart K.</p> <p><b>2. PCB Waste Transportation Routes and Environmental Justice</b></p> <p>a. The Parties have estimated about 228 truckload loads will be necessary to remove the PCB waste from the RAAP. EPA strongly recommends that transportation routes be developed and proposed taking into consideration Environmental Justice concerns identified in the attached EJSscreen report. As part of the route proposal, identify the commercial sites to where the wastes will be transported for offsite disposal.</p> <p>b. Consistent with EPA's Greener Cleanups Policy, we strongly recommend that construction equipment and trucks to be used for the transport of wastes from the RAAP to the disposal site be equipped with emission control technology. Please schedule a conference call with Karen Scheuerman of EPA (415-972-3356) to go over approaches the Parties may consider to reduce the carbon footprint associated with the PCB cleanup.</p> <p><b>3. Notification of PCB Activity</b></p> <p>a. Consistent with 40 CFR 761, the Parties must submit to EPA HQs the Notification of PCB Activity Form in 40 CFR 761.205. In this case the box in the form related to the transporter must be checked and the boxes in the form for generator and storage onsite may need to be checked depending on the site-specific situation.</p>
<p><b>D. PCB Risk-Based Cleanup Levels or Goals</b></p>	<p><b>1. Porous Surfaces</b></p> <p>a. <u>Concrete</u>: 5 milligram/kilogram (ppm) total PCBs. This cleanup level applies to all concrete surfaces inside buildings. Bulk samples must be collected from concrete surfaces using a 30-foot grid . Analysis results for bulk</p>

<b>Elements of Approval</b> <b>Table 1: General Conditions</b>	<b>Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)</b>
	<p><b>5. Indoor Air Cleanup Verification Sampling</b></p> <p>a. The air within the buildings must meet the 0.21 ug total PCBs/m<sup>3</sup> for industrial and commercial use. If future use of the RAAP is expanded to include office spaces, EPA may consider requiring the air RSL for unrestricted use of 0.0049 ug total PCBs/m<sup>3</sup> in those spaces.</p>
<p><b>E. Porous and Non-Porous Surfaces - Cleanup Inside Buildings</b></p>	<p><b>1. Cleanup Plan for Building Interior</b></p> <p>a. Within 30 days after receiving the laboratory analytical results for characterization of porous surfaces (e.g., concrete) required in this Approval and wipe and bulk samples associated with bare and coated non-porous surfaces, respectively; paint, and surfaces on currently or previously Army-owned equipment remaining at the RAAP planned for reuse and disposal, an outline describing the proposed cleanup method for porous (e.g., concrete), non-porous surfaces, and equipment must be proposed and submitted via email to Carmen Santos (santos.carmen@epa.gov). This proposal is for discussion with EPA before the actual final version of the cleanup plan is submitted to EPA for approval. EPA and the Parties will agree to the date to submit the final cleanup plan during discussion of the contents of such plan.</p>
<p><b>F. Land Use Covenant</b></p>	<p><b>1. Remaining PCBs within RAAP Buildings</b></p> <p>a. Within 90 days after EPA accepts the cleanup verification sampling data (i.e., third-party validated analytical results for concrete, non-porous surfaces, and air cleanup verification sample results), the Parties must submit to EPA a draft LUC. The draft LUC must include (1) provisions to address PCB contamination that may remain inside RAAP buildings and (2) plans for long-term monitoring and best management practices to be implemented inside RAAP buildings. Within the 90-day timeframe, the Parties must also confer and discuss with EPA the elements that will be included in the LUC.</p>
<p><b>G. PCB Cleanup Completion</b></p>	<p><b>1. Final Report Documenting Completion of PCB Cleanup Inside Buildings</b></p> <p>a. Within 45 days after the completion of cleanup (i.e., EPA has accepted third party validated analytical results for all cleanup verification samples), the Parties must submit a draft report documenting all the cleanup activities, achievement of cleanup goals or levels, PCBs remaining after cleanup, figures and maps depicting location and levels of PCB contamination remaining in RAAP buildings, tables summarizing all additional building and equipment characterization data, CD-ROM providing electronic copies of all laboratory analytical results for all samples collected under this approval, and waste disposal.</p>

<b>Elements of Approval</b> <b>Table 1: General Conditions</b>	<b>Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)</b>
	<p>concrete samples from individual surfaces (e.g., floors separate from one wall) must be used to calculate the 95% upper confidence limit (95% UCL or UCL) of the mean of the data. The UCL will be compared to the concrete cleanup level. If the UCL is equal to or below the cleanup level and the spatial distribution of the results do not suggest the need for recleaning any specific location(s) within the sampled surface area, additional cleanup will not be required.</p> <p><b>2. Non-Porous Surfaces</b></p> <p>a. <u>Equipment</u>: 5 micrograms total PCBs/100 centimeter square (5 ug total PCBs/100 cm sq.). Each sample will be compared to the cleanup goal of 5 ug /100 cm sq. If any given sample exceeds the cleanup level, additional cleanup must be conducted.</p> <p>b. <u>Steel Structure Members</u>: 5 ug total PCBs/100 cm sq. total PCBs. The 95% UCL of the mean of discrete surface wipe sample results will be calculated using ProUCL and the UCL compared to 5 ug total PCBs/100 cm. sq. If the UCL is equal to or below the UCL and the spatial distribution of the data does not suggest the need for recleaning any location(s) within the sampled surface area, additional cleanup will not be required.</p> <p><b>3. Indoor Air Before and During Galbestos and Paint Removal and Equipment Cleaning</b></p> <p>a. The air within the buildings must meet the risk-based level of 0.21 ug total PCBs/cubic meter of air (0.21 ug total PCBs/m<sup>3</sup>).</p> <p><b>4. Indoor Air Dust - Real Time Monitoring During Any Activity that Generates Dust (e.g., Galbestos, Paint Removal)</b></p> <p>a. Real-time monitoring for dust in air must not exceed the lowest value for dust in air among the following: (1) a PCB-specific dust volume calculated consistent with Condition C in Table 2, (2) California Air Resources Board PM10 standard of 0.050 ug/m<sup>3</sup>, (3) federal air standard for PM2.5. Real time monitoring must be conducted during the duration of the work day involving activities that may generate dust (e.g., paint removal, concrete cleanup activities). Real-time monitoring must be conducted within the operational areas of tenant leased and occupied areas. Refer to Condition C in Table 2 for details.</p>



**Riverbank Army Ammunition Plant – EPA Region 9 Conditional Approval for Phase 2 PCB Cleanup Work**

**Table 2: Specific Conditions of Approval**

Elements of Approval Table 2: Specific	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
<b>A. Written Certification</b>	<p><b>1. Certification Required in 40 CFR 761.61(c)(1)</b></p> <p>a. In accordance with 40 CFR 761.61(c)(1), the Parties must submit the written Certification consistent with 40 CFR 761.61(a)(3). The Certification must be signed by both the owner of the property (U.S. Army) and the cleanup party (RLRA).</p>
<b>B. Sampling Porous and Non-Porous Surfaces Inside Buildings</b>	<p><b>1. Revised Sampling and Analysis Plan (Revised SAP) in General Condition A – Table 1</b></p> <p>The Conditions below must be included in the Revised SAP required in General Condition A in Table 1 of this Approval.</p> <p><b>2. Building Interior</b></p> <p>a. The purpose of this sampling is to provide data to determine the extent of contamination in porous surfaces (e.g., concrete) and non-porous surfaces that may remain after initial cleaning of the surfaces. This data will also be used by the Parties to propose the cleanup plan required in Condition E.1 (Cleanup Plan), Table 1. This element of the Revised SAP must include figures depicting the 30-foot sampling grid (See Condition D.2.b in Table 2) for each building and tables summarizing the number of concrete samples that will be collected from concrete floors, walls, and columns from each building. The Revised SAP must clearly reflect EPA's modifications to the sampling grid; and concrete and surface (non-porous) sampling details.</p> <p><b>3. Pre-Cleanup and Cleanup</b></p> <p>a. All non-liquid samples such as concrete, paint, and wipe samples must be extracted via Soxhlet, EPA Method 3540C; and extraction followed by analysis via EPA Method 8082A. All results for concrete, paint, and other non-liquid samples must be reported as dry weight.</p> <p>b. Discrete dried paint samples must be collected from equipment and other surfaces where they are located at the RAAP to make reuse and disposal determinations (e.g., for the remaining equipment). At a minimum, each dried paint sample should consist of 30 to 50 grams. The paint samples must not be composited. The analytical laboratory must be instructed to properly pulverize and thoroughly homogenize paint samples before extraction.</p>

Elements of Approval Table 2: Specific	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
	<p>c. Concrete samples must be collected by an applicable method in the EPA Region 1 Standard Operating Procedures for porous surfaces, May 5, 2011, or latest version. In reference to concrete, if concrete chip samples are collected, the analytical laboratory must be instructed to properly pulverize and thoroughly homogenize bulk chip samples before extraction.</p> <p>d. Refer to Condition D for modifications to concrete sampling proposed in Weston's email (attached).</p> <p>e. The required Revised SAP must include a list of all buildings at the RAAP that identifies all the buildings to be cleaned up under the Phase 2 risk-based cleanup. In addition, the list must include a justification for not including as part of the PCB cleanup any building the Parties believe need not be addressed under the Phase 2 cleanup work.</p> <p><b>4. Risk-Based Cleanup Levels or Goals</b></p> <p>a. Refer to Table 1, General Conditions of Approval.</p> <p><b>5. Post-Cleanup Verification</b></p> <p>a. All non-liquid post cleanup verification samples must be extracted via EPA Method 3540C.</p> <p>b. Air sampling must be conducted post cleanup to verify remaining PCB air levels and design best management practices and air and surface wipe sampling for the long term.</p>
<p><b>C. Air Sampling, Interim Actions, Real-Time Air Monitoring, and Best Management Practices</b></p>	<p><b>1.</b> The Conditions that follow must be included in the Revised SAP required in General Condition A in Table 1 of this Approval.</p> <p><b>2. Before Galbestos and Paint Removal</b></p> <p>a. <u>All</u> tenant occupied buildings must be sampled; and the samples must be collected within each of the tenant operational areas. The air analysis results will be compared to the 0.21 micrograms total PCBs/cubic meter of air target concentration.</p> <p>b. Justification for collecting only one sample per occupied building must be provided within 15 days after the date of this Approval via email to Carmen Santos (santos.carmen@epa.gov). The justification must include a full</p>

Elements of Approval Table 2: Specific	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
	<p>b. The Parties must implement <b>PCB best management practices</b> (BMPs) concurrent with Galbestos and paint removal activities. These BMPs include thorough cleaning of all surfaces where dust may deposit using HEPA equipped vacuums and cleaning of surfaces with wet cloths. Wipe samples must be collected from surfaces as part of the BMPs once a month at all areas occupied by tenants, and/or accessed by tenants or the public.</p> <p><b>4. Interim Actions During Removal of Galbestos and Paint - Buildings or Areas not Occupied by Tenants and with No Access to Tenants and/or Public</b></p> <p>a. If walls or other physical barriers do not fully and efficiently isolate the air in these buildings and/or areas within these buildings from the air volume in tenant-occupied areas and public access areas (if any), the Parties must conduct the BMPs required in Condition C.3.b in Table 2 of this Approval. However, if mixing of the air within unoccupied or no access buildings is efficiently prevented by physical means (e.g., walls that extend all the ceiling without gaps), the Parties must conduct the BMPs in Condition C.3.b in Table 2 of this Approval after removal of all Galbestos panels or upon tenant occupation of the space, whichever occurs first.</p>
<p><b>D. Concrete Verification Sampling and Cleanup</b></p>	<p><b>1.</b> The Conditions that follow must be included in the Revised SAP required in General Condition A in Table 1 of this Approval.</p> <p><b>2. Post Galbestos and Paint Removal</b></p> <p>a. Within 60 days after the date of this approval, confirm via email the cleanup method for concrete. When selecting your cleanup method please consider that California is in a severe drought. Also refer to Condition E in Table 1.</p> <p>b. Concrete floors must be sampled following the grid described (30-foot spacing) and depicted in the attached figure and email from Weston, respectively, and as modified by this Condition. The grid must be extended to the area in the figure where only single samples in a row are shown and the grid is interrupted. Refer to Condition B (Sampling Plan) in this Table 2.</p> <p>c. Depending on the results of biased concrete sampling, EPA may require additional concrete floor samples.</p>

Elements of Approval Table 2: Specific	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
	<p>description of each building layout with figures and indicate if the building space is totally open and has no subdividing walls, and (2) explain what volume of air within one building will be represented by the one air sample proposed for collection within each building. Tenant spaces vary from 400 to 73,000 square feet.</p> <p>c. Air samples must be collected during a 24-hour period via Method TO-4A and a quartz filter attached to the TO-4A sampling train (PUF).</p> <p>d. The PUF and quartz filter must be individually extracted via EPA Method 3540C (Soxhlet); and each extract individually analyzed via EPA method 8082A.</p> <p>e. The air in all non-tenant occupied spaces that are currently not accessible to tenants and/or the public must be tested during post-cleanup verification sampling activities if those spaces are not planned for occupancy before cleanup activities are completed.</p> <p><b>3. Interim Actions and Best Management Practices During Removal of Galbestos and Paint - Tenant-Occupied Spaces and Other Areas Accessible to Tenants and/or Public</b></p> <p>a. Real time air sampling for PCB-containing dust must be conducted at each tenant-occupied building during the duration of the Galbestos removal activities. The PCB-specific maximum volume of dust within tenant operational areas not to be exceeded must be calculated using the attached formula. The PCB concentration to input into the formula must be the highest total PCB concentration (Aroclor 1260 plus Aroclor 1268) measured in Galbestos panels at the RAAP. In making this calculation, previous PCB concentrations measured in bulk dust (e.g., up to 384 ppm) should be considered. If the calculated not-to-exceed dust volume is exceeded at any time, the Parties must take actions protective of the tenants and their work spaces to reduce dust to below the not-to-exceed target volume.</p> <p>EPA strongly recommends the Parties consult on indoor and outdoor air sampling (e.g., PM10 and PM2.5, visible fugitive dust) at the RAAP with the local Air Quality Management District with jurisdiction in the city of Riverbank. The Air Quality Management District may have rules that specify air sampling requirements that may be more stringent than the air dust monitoring that EPA requires in this condition. This approval does not cover asbestos or other contaminants that may be present in indoor or outdoor air at the RAAP.</p>

<b>Elements of Approval</b> <b>Table 2: Specific</b>	<b>Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)</b>
	<p>d. The analytical results of all concrete floor samples (grid and biased samples) must be input into the Pro-UCL program to calculate the 95% upper confidence level (UCL) of the mean of the concrete analytical results. Refer to Condition D.1, Table 1 (General Conditions of Approval) for details.</p> <p>e. The spatial distribution of the analytical results for concrete floors in each building must be evaluated to determine if any results are clustered that may indicate an area needing further decontamination.</p> <p>f. A table that summarizes and a figure that depicts all analytical results for interior concrete floor surfaces at each building and exterior concrete surfaces must be provided together with a CD-ROM that contains the laboratory analytical reports and chain of custody forms. This information must be submitted to EPA within 30 days after the Parties receive the analytical laboratory results.</p> <p>g. Building walls and columns that are porous must be sampled using a sampling grid. The same grid that will be used for concrete floor sampling may be used for sampling the walls. The Parties may propose via email to Carmen Santos (<a href="mailto:santos.carmen@epa.gov">santos.carmen@epa.gov</a>) and within 60 days after the date of this Approval a different grid to sample building walls for discussion with EPA and to reach agreement on such grid. Concrete columns must be sampled following a grid or other applicable sampling method that yields representative samples for the size of the areas that will be sampled.</p>
<b>E. Steel Structure Cleanup and Verification Sampling</b>	<p>1. The Conditions that follow must be included in the Revised SAP required in General Condition A in Table 1 of this Approval.</p> <p>2. <b>Post Galbestos and Paint Removal</b></p> <p>a. Within 60 days after the date of this approval, confirm via email to Carmen Santos (<a href="mailto:santos.carmen@epa.gov">santos.carmen@epa.gov</a>) the cleanup method for the steel structure.</p> <p>b. Discrete wipe samples must be collected at every 40 feet of steel member length. However, sample locations must be selected at random to allow for different sides of the surfaces to be sampled. Surface wipe analytical results must be equal to or below 5 ug total PCBs/100 cm. square. Refer to Condition B.3 (Table 2) for the sample extraction method that must be used.</p>

<b>Elements of Approval</b> <b>Table 2: Specific</b>	<b>Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)</b>
	<p>c. The Parties must reclean accessible surfaces that may pose a direct risk of exposure to PCBs if wipe samples exceed 5 ug/100 cm square.</p>
<b>F. Remaining Equipment</b>	<p><b>1. Inventory of Currently or Previously Army Owned Remaining Equipment at the RAAP</b></p> <p>a. Within 45 days after the date of this approval, a complete inventory of all equipment remaining at the RAAP that may be contaminated with or contains PCBs must be submitted to EPA. The inventory must describe each item, construction material (e.g., metal), if the item is painted, analytical results for the paint/piece of equipment, and preliminary disposition of the equipment (i.e., disposal or reuse). In the preliminary disposal determinations, the Parties must identify whether the equipment is a PCB item (as defined in 40 CFR 761.3), PCB remediation waste, or PCB bulk product waste and include the disposal requirements that will be followed for disposal.</p>
<b>G. Equipment Surfaces Sampling, Disposal or Reuse</b>	<p><b>1. The Conditions that follow must be included in the Revised SAP required in General Condition A in Table 1 of this Approval.</b></p> <p><b>2. Painted Equipment</b></p> <p>a. Each piece of remaining equipment must be sampled separately. Discrete paint samples from the same piece of equipment may be composited and a maximum of three discrete paint samples may be composited.</p> <p><b>3. Unpainted Equipment or Equipment with Paint Removed</b></p> <p>a. Each piece of remaining equipment must be sampled separately. Discrete surface wipe samples from the same piece of equipment may be composited and the composite sample not to exceed three discrete wipe samples. For very large pieces of equipment (each piece weighs several tons), discrete wipe samples may be composited and a maximum of five (5) discrete samples may be composited.</p>
<b>H. On-Site Storage of Waste</b>	<p><b>1. PCB Remediation Waste, Total PCBs equal to or above 50 ppm</b></p> <p>a. PCB remediation waste must be stored consistent with the requirements in 40 CFR 761.65. Under this Approval, EPA is extending the 30-day (from the date of waste generation) timeframe in 40 CFR 761.65(c)(1) to store PCB remediation wastes in containers to 180 days (from the date of waste generation) provided all applicable requirements in that subparagraph and 40 CFR 761.65(c)(2) through (c)(6) are met.</p>

<b>Elements of Approval</b> <b>Table 2: Specific</b>	<b>Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)</b>
	<p>All other applicable requirements in 40 CFR 761 including and not limited to labeling, marking, manifesting of the waste, notification of PCB activity (EPA Form 7710-53), and records must be followed in addition to all applicable state and local requirements.</p> <p>b. In this approval, EPA is extending the 30-day timeframe in 40 CFR 761.65(c)(1) to store liquid waste that may contain PCBs at levels equal to or above 50 ppm in tanks to 60 days after the date of generation provided all the applicable requirements in 40 CFR 761.65(c)(1) through (c)(6) are met and the containers are inspected daily and do not leak.</p> <p><b>2. PCB Remediation Waste, Total PCBs below 50 ppm</b></p> <p>a. EPA recommends storage of these wastes be conducted in same manner as in Condition H.1 (Table 2).</p> <p><b>3. PCB Remediation Wastes, Water exceeding 0.5 ug total PCBs/L and containing less than 50 ppm PCBs</b></p> <p>a. Storage of this waste must comply with all the applicable requirements in 40 CFR 761.65(c) in addition to all other applicable requirements in 40 CFR 761 including and not limited to labeling, marking, and manifesting, and all applicable state and local requirements.</p> <p>b. In this approval, EPA is extending the 30-day timeframe in 40 CFR 761.65(c)(1) to store liquid waste that may contain total PCBs at levels below 20 ppm (in this case, contaminated water) in DOT approved containers to 60 days after the date of generation provided all the applicable requirements in 40 CFR 761.65(c)(1) through (c)(6) are met and the containers are inspected daily and do not leak.</p>
<b>I. Disposal of Wastes Containing PCBs</b>	<p><b>1. PCB Remediation Waste (e.g., concrete contaminated by PCBs from liquid or non-liquid sources)</b></p> <p>a. These wastes must be characterized for disposal and disposed consistent with 40 CFR 761.61(a)(5) all other applicable requirements in 40 CFR 761 (not limited to labeling and marking); and applicable state and local requirements.</p> <p>b. If not sampled for disposal, PCB remediation waste may be disposed based on the assumption that PCBs are present at levels equal to or above 50 ppm. Also refer to Condition G in this Table 2. Each piece of equipment must be sampled separately. Discrete paint samples from the same piece of equipment may be composited and the composite sample not to exceed three discrete paint samples.</p>

Elements of Approval Table 2: Specific	Conditions of Approval, Implementation by the Parties (U.S. Army and Riverbank Local Redevelopment Authority)
	<p><b>2. PCB Cleanup Wastes</b>  a. These wastes must be disposed consistent with 40 CFR 761.61(a)(5) and all other applicable requirements in 40 CFR 761; and applicable state and local requirements.</p> <p><b>3. Liquid PCB Remediation Wastes</b>  a. Water to be generated during cleanup activities must be disposed consistent with the requirements in 40 CFR 761.61(b) or 761.79(b)(1); and other applicable requirements in 40 CFR 761; and applicable state and local requirements. The water must be analyzed for all the Aroclors, including Aroclor 1268.</p> <p>b. If paint and/or Galbestos particles are not removed from the water before storage of the water in tanks, the sediments in the tanks must be disposed as a PCB bulk product waste consistent with the applicable requirements in 40 CFR 761.62, any other applicable requirements in 40 CFR 761, and all applicable state and local requirements.</p> <p><b>4. PCB Waste Generated During Removal of Paint</b>  a. Waste generated during paint removal must be disposed consistent with applicable requirements in 40 CFR 761.79, other applicable requirements in 40 CFR 761, and all state and local applicable requirements.</p>



## Enclosure 2

### EPA Region 9 – Formula to Calculate Dust Volume for Real-Time Monitoring

“Real-time dust monitoring should be used to assure that PCB levels in dust in air are maintained below risk-based levels. Real-time dust monitoring should be continuous during demolition operations and performed at locations that include those representative of potential maximum off-site dust concentrations. Real-time “background” dust-in-air concentrations may be subtracted from site-related measurements when determining compliance with risk-based limits on dust-in-air concentrations. “Background” dust-in-air concentrations must be measured in real time and compared to real time dust-in-air concentrations at “downwind” monitoring locations. Response to exceedances of project-related dust-in-air limits should be performed promptly.

Acceptable level of dust in air based on PCB concentration of 1 mg/kg in dust source may be calculated as follows, EPA will consider proposals for the use of other methods.

$$C_{da} = RfCd \times 1E9 / C_{ca}$$

Where

$C_{da}$  = concentration of dust in air (ug/m<sup>3</sup>)

$RfCd$  = Derived inhalation reference concentration (mg/m<sup>3</sup>)

$C_{ca}$  = Allowable PCB concentration in concrete (1 mg/kg)

1E9 = Unit conversion factor (ug/kg)

No inhalation RfC is published in IRIS, and so must be derived ( $RfCd$ ) from the oral reference dose:

$$RfCd = RfDo \times BW / IR$$

Where

$RfDo$  = Oral reference dose (2E-5 mg/kg-da)

$BW$  = Body weight (15 kg) (body weight used to develop soil RSLs)

$IR$  = Inhalation rate (10 m<sup>3</sup>/day) (corresponds to body weight in EFH Tables 6-1 and 8-1)

Any air sampling for TO-10 analysis should use the nominally optional glass-fiber filter in the sample collection train. The glass-fiber filter and PUF sorbent should be analyzed separately for each air sample.”



## Enclosure 3

### Santos, Carmen

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**From:** Woodyard, John <John.Woodyard@WestonSolutions.com>  
**Sent:** Friday, June 26, 2015 8:26 AM  
**To:** Santos, Carmen; Armann, Steve  
**Cc:** Warren.H.Switzer.civ@mail.mil; Orloski, Ed; Judy Flook; 'McAlister, James P SPK' (James.P.McAlister@usace.army.mil)  
**Subject:** RBAAP Phase 2 Approval Cleanup Goals and Conditions

Carmen and Steve, thank you again for taking the time to discuss the RBAAP project with us several times this week. We sincerely appreciate your making this approval a priority.

Based on the outcome of those discussions, we respectfully propose the following cleanup goals and associated approval conditions at RBAAP:

#### Air monitoring:

- Same project standard as before during Phase 1 (0.2 ug/m3) using high volume sampling method TO-4A or -10A.
- Collect 1 round of air samples in 4 tenant-occupied areas before beginning work; compare with standard and previous results
- Collect 1 clearance air sample in each building after completion of all work.
- Collect 1 air sample in each occupied building 1 and 2 years after final building clearance sampling.

#### Concrete Sampling:

- Concrete project standard of 5 ppm UCL of mean, based on ProUCL analysis of data, by building.
- No maximum concentration limit
- Collect confirmation samples using a 30 ft square grid, grid starting location and orientation randomly selected (equivalent to 2 additional rows of samples instead of one, not down the middle)
- Collect additional biased concrete samples (assume 5 per building) in stained or cracked areas, probably before final cleaning, and results excluded from ProUCL calculation if concrete is removed.

#### Surface Sampling

- Surface sampling project standard for tenant space of 5 ug/100 cm2; exceedances to be investigated
- Wipe samples to be collected at ground level in tenant spaces on contact surfaces
- Collect 5 wipe samples per building in tenant spaces immediately after air clearance
- Collect 5 wipe samples per building in tenant spaces 1 and 2 years after air clearance.
- Use Soxhlet extraction for wipe samples

Carmen, as promised, we will also be getting you the following shortly:

- A map that overlays previous air sampling locations with occupied tenant spaces
- Any previous tenant wipe sample results

Please let me know if you have questions or need additional clarification. If these goals and conditions are acceptable, we look forward to receiving the approval documents soon so that Army project funding can be initiated on time.

John

John P. Woodyard, PE, QEP  
Vice President  
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Mundelein, IL 60060

224-864-7220 Office  
847-826-8131 Cell

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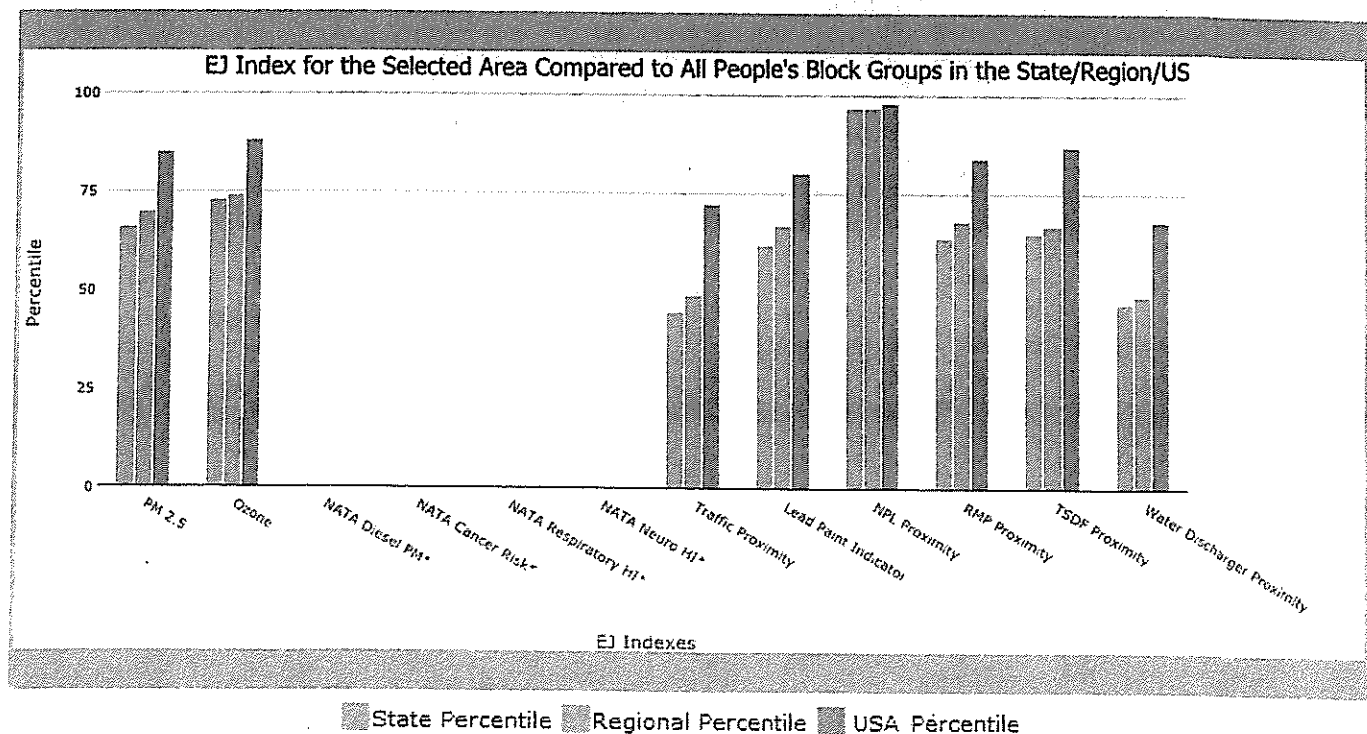
## EJSCREEN Report



for 1 mile Ring Centered at 37.713702,-120.919181, CALIFORNIA, EPA Region 9

Approximate Population: 3287

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	66	70	85
EJ Index for Ozone	73	74	88
EJ Index for NATA Diesel PM*	N/A	N/A	N/A
EJ Index for NATA Air Toxics Cancer Risk*	N/A	N/A	N/A
EJ Index for NATA Respiratory Hazard Index*	N/A	N/A	N/A
EJ Index for NATA Neurological Hazard Index*	N/A	N/A	N/A
EJ Index for Traffic Proximity and Volume	45	49	72
EJ Index for Lead Paint Indicator	62	67	80
EJ Index for Proximity to NPL sites	97	97	98
EJ Index for Proximity to RMP sites	64	68	84
EJ Index for Proximity to TSDFs	65	67	87
EJ Index for Proximity to Major Direct Dischargers	47	49	68



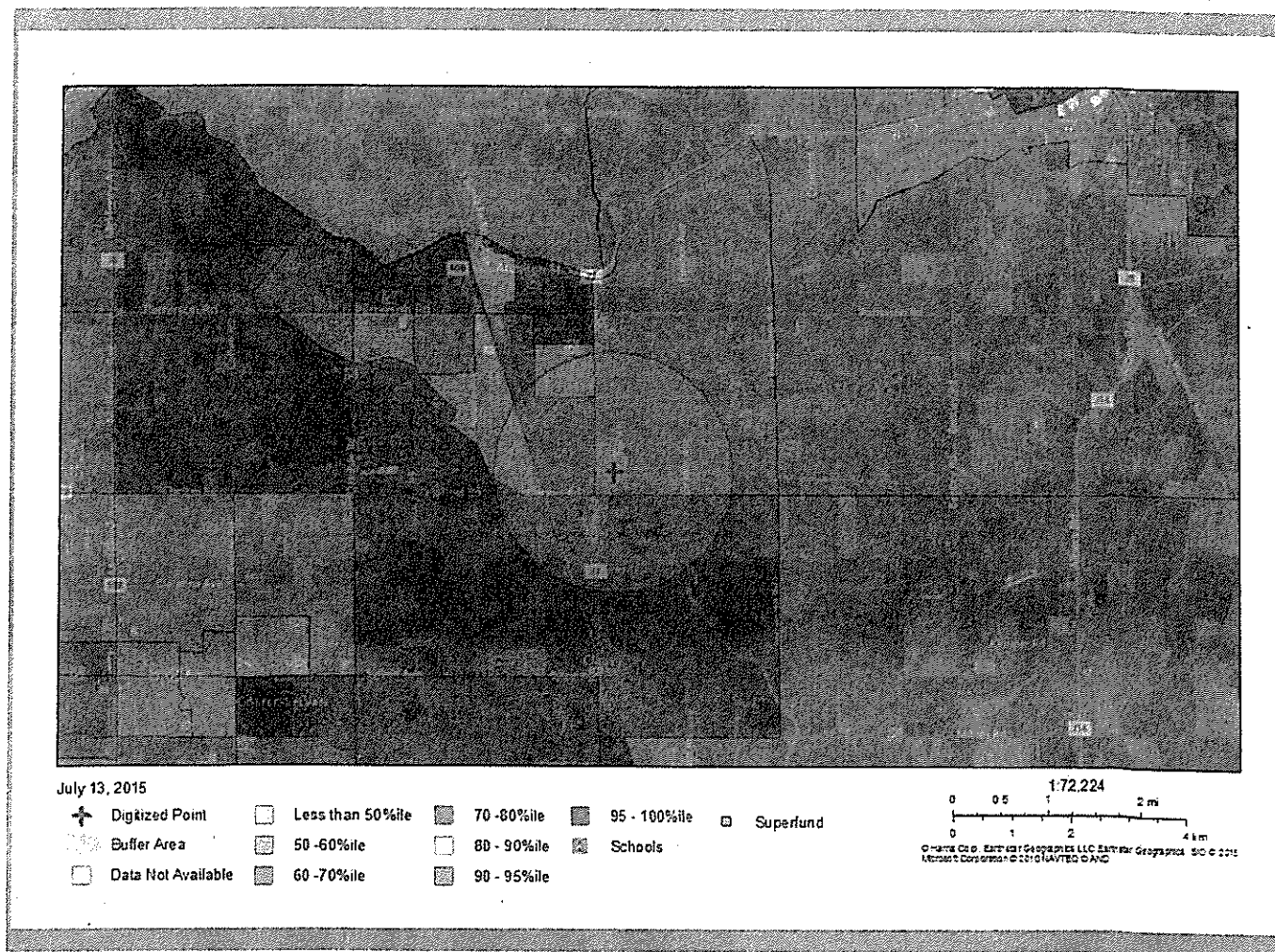
This report shows environmental, demographic, and EJ indicator values. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

# EISCREEN Report



for 1 mile Ring Centered at 37.713702,-120.919181, CALIFORNIA, EPA Region 9

Approximate Population: 3287



## EJSCREEN Report

for 1 mile Ring Centered at 37.713702,-120.919181, CALIFORNIA, EPA Region 9

Approximate Population: 3287



Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	9.95	10.4	42	9.95	53	9.78	50
Ozone (ppb)	54.2	48.4	70	49.7	63	46.1	89
NATA Diesel PM ( $\mu\text{g}/\text{m}^3$ )	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Cancer Risk (lifetime risk per million)*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Respiratory Hazard Index	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NATA Neurological Hazard Index	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Traffic Proximity and Volume (daily traffic count/distance to road)	15	210	12	190	16	110	30
Lead Paint Indicator (%Pre-1960 Housing)	0.14	0.3	41	0.25	50	0.3	41
NPL Proximity (site count/km distance)	0.6	0.13	97	0.11	97	0.096	98
RMP Proximity (facility count/km distance)	0.24	0.46	58	0.41	62	0.31	69
TSD Proximity (facility count/km distance)	0.054	0.13	43	0.12	46	0.054	75
Water Discharger Proximity (facility count/km distance)	0.029	0.18	5	0.19	6	0.25	4
<b>Demographic Indicators</b>							
Demographic Index	58%	47%	65	46%	67	35%	80
Minority Population	66%	60%	53	57%	57	36%	78
Low Income Population	50%	35%	73	35%	73	34%	76
Linguistically Isolated Population	17%	10%	75	9%	78	5%	90
Population With Less Than High School Education	31%	19%	74	18%	77	14%	88
Population Under 5 years of age	10%	7%	80	7%	80	7%	83
Population over 64 years of age	8%	12%	40	12%	40	13%	30

\* The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes, which include cancer risk, respiratory hazard, neurodevelopment hazard, and diesel particulate matter will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available. The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <http://www.epa.gov/ttn/atw/natamain/index.html>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

